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REPORT OF PROCEEDINGS

AT

PUBLIC HEARINGS REGARDING PROPOSED CLASSIFICATIONS

FOR THE

WATERS OF THE ROANOKE RIVER BASIN

January 15, 16, 1957

North Carolina

State Stream Sanitation Committee

State Board of Health

Raleigh

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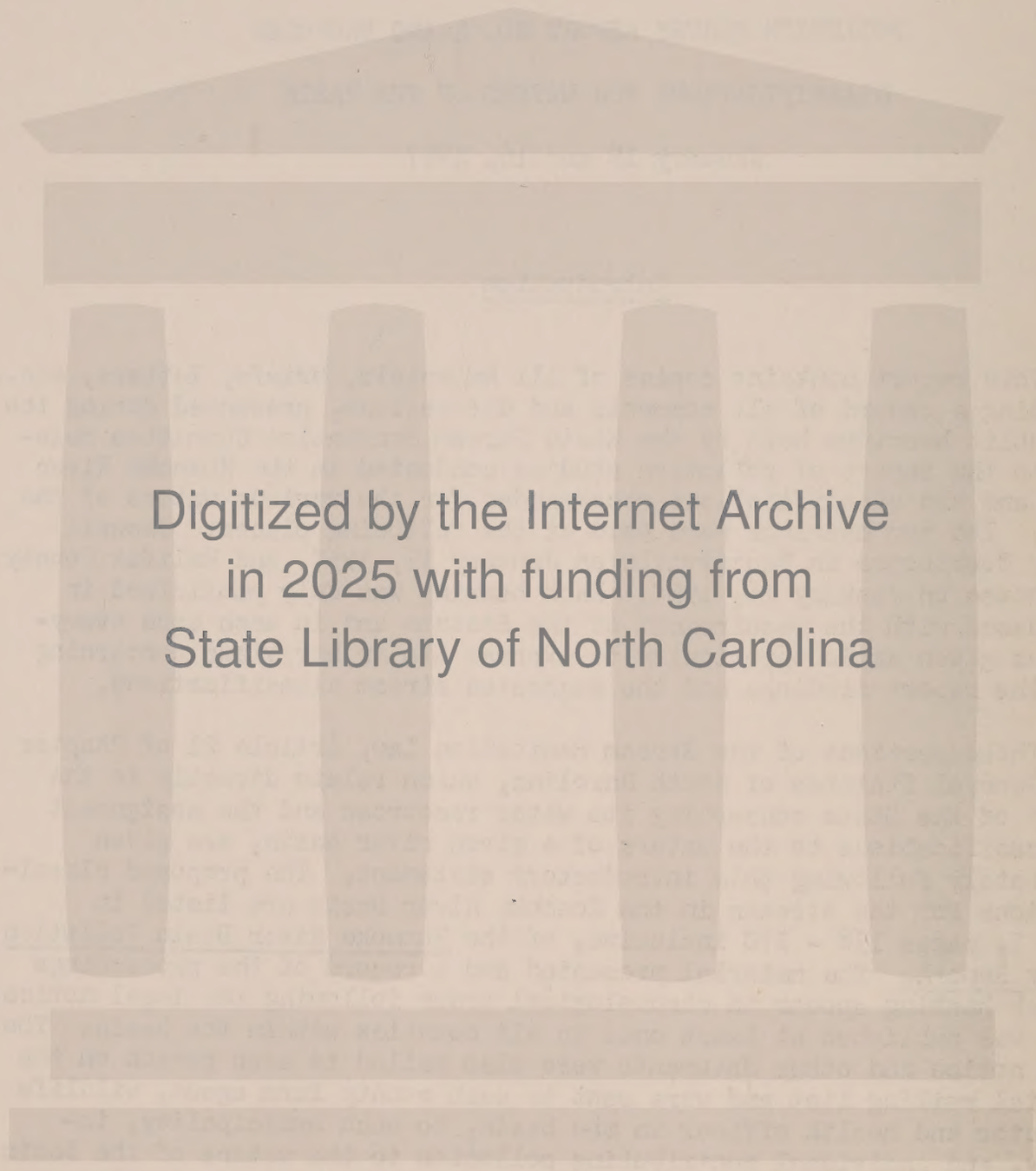
PUBLIC HEARINGS ON THE ROANOKE RIVER BASIN POLLUTION SURVEY REPORT NO. 4 AND PROPOSED CLASSIFICATIONS FOR WATERS OF THE BASIN

January 15 and 16, 1957

Introduction

This report contains copies of all materials, briefs, letters, etc., including a record of all comments and discussions, presented during the two public hearings held by the State Stream Sanitation Committee relative to the report of pollution studies conducted in the Roanoke River Basin and the classifications recommended for the various waters of the Basin. The two hearings were held at the following places: Caswell County Courthouse in Yanceyville on January 15, 1957, and Halifax County Courthouse on January 16, 1957. Each hearing was duly publicized in accordance with the requirement of the Statute and in each case everyone was given ample opportunity to express his or her views concerning both the report findings and the suggested stream classifications.

Those sections of the Stream Sanitation Law, Article 21 of Chapter 143, General Statutes of North Carolina, which relate directly to the policy of the State concerning its water resources and the assignment of classifications to the waters of a given river basin, are given immediately following this introductory statement. The proposed classifications for the streams in the Roanoke River Basin are listed in Table 7, pages 158 - 170 inclusive, of the Roanoke River Basin Pollution Survey Report. The material presented and a record of the proceedings at each hearing appear in chronological order following the legal notice, which was published at least once in all counties within the Basin. The legal notice and other documents were also mailed to each person on the official mailing list and were sent to each county farm agent, wildlife protector and health officer in the Basin, to each municipality, industry, and individual contributing pollution to the waters of the Basin and to State and Federal Agencies having an interest in the problem.



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Excerpt From Law Relating to Stream Sanitation

(Article 21, General Statutes of North Carolina)

SECTION 143-211. Declaration of Policy. It is hereby declared to be the policy of the State that the water resources of the State shall be prudently utilized in the best interest of the people. To achieve this purpose, the government of the State shall assume responsibility for the quality of said water resources. The maintenance of the quality of the water resources requires the creation of an agency charged with this duty, and authorized to establish methods designed to protect the water requirements for health, recreation, fishing, agriculture, industry, and animal life. This agency shall establish and maintain a program adequate for present needs, and designed to care for the future needs of the State.

SECTION 143-215. Water classification; standards and assignment of classifications.

(a) Duties of Committee Under This Section: The committee is hereby directed and empowered, as rapidly as possible within the limits of funds and facilities available to it, and subject to the procedural requirements of this Article:

(1) To develop and adopt, after proper study, a series of classifications and the standards applicable to each such classification, which will be appropriate for the purpose of classifying each of the waters of the State in such a way as to promote the policy and purposes of this Article most effectively;

(2) To survey all the waters of the State and to separately identify all such waters as the committee believes ought to be classified separately in order to promote the policy and purposes of this Article, omitting only such waters as, in the opinion of the committee, are sufficiently important to justify classification or control under this Article; and

(3) To assign to each identified water of the State such classification, from the series adopted as specified above, as the committee deems proper in order to promote the policy and purposes of this Article most effectively.

(b) Criteria for Classification: In developing and adopting classifications, and the standards applicable to each, the committee shall recognize that a number of different classifications should be provided for (with different standards applicable to each) so as to give effect to the need for balancing conflicting consideration as to usage and other variable factors; that different classifications with different standards applicable thereto may frequently be appropriate for different segments of the same water; and that each classification and the standards applicable thereto should be adopted with primary reference to an existing or a contemplated best usage to be made of the waters to which such classification will be assigned.

(c) Criteria for Standards: In establishing the standards applicable to each classification, the committee shall consider, and the standards when finally adopted and published shall state: The extent to which any physical, chemical, or biological properties should be prescribed as essential to the contemplated best usage.

(d) Criteria for Assignment of Classifications: In assigning to each identified water the appropriate classification (with its accompanying standards), the committee shall consider, and the decision of the committee when finally adopted and published shall contain its conclusions with respect to the following factors as related to such identified waters:

(1) The size, depth, surface area covered, volume, direction and rate of flow, stream gradient and temperature of the water;

(2) The character of the district bordering said water, including any peculiar suitability such district may have or any dominant economic interest or development which has become established in relation to or by reason of any particular use of such water;

(3) The uses which have been made, are being made, or may in the future be made, of such water for transportation, domestic consumption, industrial consumption, bathing, fishing and fish culture, fire prevention, the disposal of sewage, industrial wastes and other wastes, or any other uses;

(4) The extent to which such water is already receiving sewage, industrial waste, or other waste as a result of present or past usage of the water and the relative economic values involved in improving or attempting to improve the condition of such water.

(e) Proposed Adoption and Assignment of Classification: Prior to the adoption by the committee of the series of classifications and standards applicable thereto as specified in subparagraph (a) (1) of this Section, prior to the assignment by the committee of any such classifications to any waters as specified in subparagraph (a) (3) of this Section, and prior to any modification of any of such actions previously taken by the committee, the committee shall give notice of its proposed action and shall conduct one or more public hearings with respect to any such proposed action in accordance with the following requirements:

(1) Notice of any such hearing shall be given not less than 20 days before the date of such hearing and shall state the date, time, and place of hearing, the subject of the hearing, and the action which the committee proposes to take. The notice shall either include details of such proposed action, or where such proposed action, as in the case of proposed assignments of classifications to identified waters, is too lengthy that copies of such detailed proposed action can be obtained on request from the office of the committee in sufficient quantity to satisfy the requests of all interested persons.

(2) Any such notice shall be published at least once in one newspaper of general circulation circulated in each county of the State in which the water area affected is located, and a copy of such notice shall be mailed to each person on the mailing list required to be kept by the committee pursuant to the provisions of Section 143-215.4.

(3) Any person who desires to be heard at any such public hearing shall give notice thereof in writing to the committee on or before the first date set for the hearing. The committee is authorized to set reasonable time limits for the oral presentation of views by any one person at any such public hearing. The committee shall permit anyone who so desires to file a written argument or other statement with the committee in relation to any proposed

action of the committee at any time within 30 days following the conclusion of any public hearing or within any such additional time as the committee may allow by notice given as prescribed in this Section.

(f) Final Adoption and Assignment of Classifications: Upon completion of hearings and consideration of submitted evidence and arguments with respect to any proposed action of the committee pursuant to this Section, the committee shall adopt its final action with respect thereto and shall publish such final action as part of its official regulations. When final action has been adopted and is published with respect to the assignment of classifications applicable to the identified waters of any one or more watersheds within the State, the committee shall likewise publish as part of its official regulations, the effective date for the application of the provisions of Section 143-215.1 and 143-215.2 of this Article to persons within such watershed or watersheds. Such effective date shall not be less than 60 days from the date of such publication.

(g) Committee's Power to Modify or Revoke: The committee is empowered to modify or revoke from time to time any final action previously taken by it pursuant to the provisions of this Section, any such modification or revocation, however, to be subject to the procedural requirements of this Article.

STATE OF NORTH CAROLINA

STATE STREAM SANITATION COMMITTEE

STATE BOARD OF HEALTH

RALEIGH, NORTH CAROLINA

L E G A L N O T I C E

Notice is hereby given, pursuant to Section 143-215, General Statutes of North Carolina, that a public hearing concerning pollution of the waters of the Roanoke River Drainage Basin and the assignment of classifications to said waters will be held in the Courtroom of the Caswell County Courthouse, Yanceyville, North Carolina, beginning at 9:30 A. M., EST, Tuesday, January 15, 1957.

The waters to be considered for classification during this hearing include the Dan, Mayo, Smith and Roanoke Rivers and all tributaries thereto comprising the Roanoke River Drainage Basin lying in North Carolina above the John H. Kerr Dam. These waters border on or flow through the Counties of Rockingham, Stokes, Forsyth, Caswell, Person, Granville, Vance, Surry, and Guilford.

All persons interested in the classification of the waters in the area are invited to attend and take part in the discussion. Persons desiring to be heard should give notice thereof in writing to the Committee on or before the date of the hearing. It is requested that, insofar as possible, any person desirous of offering lengthy comments and discussion in regard to the proposed classification of the streams, be prepared at the public hearing to offer a written statement to be included in the record of proceedings.

Additional information and copies of the proposed classifications are available in the office of the State Stream Sanitation Committee, State Board of Health, Raleigh, and may be obtained upon request.

STATE STREAM SANITATION COMMITTEE

E. C. Hubbard

E. C. Hubbard, Executive Secretary

PROCEEDINGS OF PUBLIC HEARING HELD IN

YANCEYVILLE ON JANUARY 15, 1957

Note: (The hearing, for the purpose of considering proposed stream classifications for the upper portion of the Roanoke River Basin, was called to order in the courtroom of the Caswell County Courthouse at 9:45 A. M., with approximately 55 persons present, including the following members of the Committee: Mr. J. V. Whitfield, Chairman; Mrs. Karl Bishopric, Vice Chairman; Mayor Scott B. Berkeley, Mr. J. N. Vann, Mr. Walter Clark, Mr. H. Grady Farthing, and Mr. B. C. Snow. Members of the staff present were: Mr. E. C. Hubbard, Executive Secretary; Mr. W. E. Long, Jr., Chief, Pollution Control Section; Mr. W. E. Knight, Chemist; Mr. D. L. Coburn, Sanitary Engineer; Mr. E. C. Hargrave, Chemist; and Mrs. Marjorie T. Carmichael, Recording Secretary.)

J. V. Whitfield, Chairman, State Stream Sanitation Committee, Burgaw, North Carolina, Presiding: Ladies and Gentlemen, the meeting will please come to order. It is a pleasure for the State Stream Sanitation Committee to be with you today. During the proceedings which are to follow we will discuss the suggested classifications for the waters in the upper portion of the Roanoke River Basin, while at tomorrow's hearing, to be held in Halifax, we will discuss those recommended for the lower portion of the basin.

I am going to introduce the members of the Committee now and at the end of the hearing they will be given an opportunity of offering any comments they wish to make. Mr. H. Grady Farthing, on my left, is from Boone, North Carolina, and represents the wildlife activities of the State; Mr. Walter Clark, of Lincolnton, represents industry; Mr. J. N. Vann, of Ahoskie, represents municipalities; Mr. Scott B. Berkeley, Mayor of Goldsboro, also represents municipalities; Mrs. Karl Bishopric, of Spray, is Vice Chairman of the Committee and represents the textile industry; Colonel B. C. Snow is one of our ex officio members and is Chief Engineer of the Division of Water Resources, Inlets and Coastal Waterways of the Department of Conservation and Development; Mr. J. M. Jarrett, Director of the Sanitary Engineering Division of the State Board of Health, our other ex officio member, could not be present today; however, he plans to be with us tomorrow at Halifax. I am J. V. Whitfield, from Burgaw, North Carolina, and as most of you know, I represent agriculture. In addition to the members of our Committee, we also have with us Mr. E. C. Hubbard, Executive Secretary to the Committee, Mrs. Marjorie T. Carmichael, Secretary, and Mr. Knight, Mr. Hargrave, Mr. Coburn, and Mr. Long, of our staff. It is a pleasure for all of us to have the opportunity of meeting with you.

In the beginning, let me assure you that we are not a punitive Committee; we are your Committee. We are here to serve the State of North Carolina in all phases of its life in the best way we know how. We do not want any municipality or industry to feel that we are here as a punitive Committee; however, it is our purpose to establish and maintain a program that will assure clean streams for North Carolina. We will endeavor to see that everyone's suggestions and recommendations are given fair consideration; however, we want you to understand that our decisions must be rendered on the basis of what is best

for the State as a whole. The meeting will now be turned over to Mr. E. C. Hubbard, our Executive Secretary, who will present information relating to the findings of the Roanoke River studies and the proposed classifications for the waters in that basin.

E. C. Hubbard, Executive Secretary, State Stream Sanitation Committee, Raleigh, North Carolina: Mr. Chairman, members of the Committee, and ladies and gentlemen. I would like first to express the appreciation of the Committee for you people taking the time to attend this hearing for the purpose of helping the Committee with the problem of determining the proper classifications to be assigned to the various waters of the Roanoke River Basin. I can assure you that the Committee appreciates your interest and your help in connection with this important matter.

This is the first of two hearings that have been scheduled to be held in the Roanoke River Basin. The second hearing will be held tomorrow in the Halifax Courthouse at Halifax, North Carolina. Today's hearing, as Senator Whitfield has mentioned, has been scheduled for the specific purpose of receiving your comments concerning what classifications you wish assigned to the waters of the upper Roanoke River Basin and for what uses you wish those waters to be protected. As indicated in the public notice published in the newspapers in each of the counties lying within the upper portion of the river basin, today's hearing will be concerned with the waters of those areas of the basin which flow through the counties of Rockingham, Stokes, Forsyth, Caswell, Person, Granville, Vance, Surry, and Guilford. These counties constitute that portion of the Roanoke River Basin which includes the Dan, Mayo, Smith, and Roanoke Rivers and their tributaries lying in North Carolina above the John H. Kerr Reservoir. From the map, you will see that the area covered includes all of the territory above the Kerr Reservoir which is located in North Carolina.

It will not be the purpose of this hearing to present information concerning needed pollution abatement measures for any specific municipality or industry. Obviously, any decision with reference to pollution abatement can only be made after the Committee has officially assigned classifications and water quality standards that must be maintained in the waters of the basin. In other words, our purpose in this particular hearing will not be that of discussing what Yanceyville should do about its pollution or what Reidsville, Leaksville, Spray, or other cities or industries in the basin should do toward correcting pollution for which they may be responsible. This hearing is intended entirely for the purpose of determining in what condition you wish your streams maintained. The final classifications for the streams must, of course, await the completion of these hearings so that due consideration can be given to the comments and discussions presented by the public.

A considerable amount of work has gone into the studies of the Roanoke River Basin and the preparation of the report. I think most of you have already received the Roanoke River Pollution Survey Report. If you have not, we have extra copies with us and would suggest you take a copy with you at the conclusion of our meeting, or if you would like to have it during the meeting there are copies available. Again I would like to say that this hearing is being held for your benefit. It is your hearing, which is being held for the specific purpose of giving you an opportunity to tell the

Committee how you would like the streams in your area classified. As indicated in the public notice, you will be given an opportunity to offer your comments during the course of this hearing. However, if you prefer to wait the Statute provides that anyone may present a written brief within thirty days after the hearing.

For simplicity, we elected to divide the hearing into three parts. The first part will consist of a brief discussion of the purpose of the hearing and a brief review of the Statute and the policies of the Committee with reference to the procedures that must be followed in holding hearings of this type to establish and carry out the Stream Sanitation program. The second part of the hearing will consist of a presentation of factual data contained in the report and the suggested classifications for the waters under consideration. The third portion of the hearing will be devoted to comments from those of you who wish to discuss either the report or the suggested classifications. In this connection, each of you received as you entered the room, or since you have been in the room, a blank form on which you may indicate whether or not you desire to be heard during the proceedings this morning. I hope that you have completed these forms and that you will pass them up to the speaker's desk so that you may be recognized at the appropriate time. In the event you indicated you did not desire to be heard and later desire differently, it is requested that you make known your desire in order that we may give everyone an opportunity of giving the Committee the benefit of any thoughts they have regarding the proposed classifications.

There are certain policies and procedures that the Committee must follow in carrying out the Stream Sanitation program in this or any other river basin within the State. There are certain studies to be made, meetings and public hearings to be held, as well as certain other actions that must be taken befor the program can be fully developed. The first requirement of the Law with reference to the program states that the Committee shall develop and adopt a series of classifications and standards applicable to such classifications which will be appropriate for the purpose of classifying each of the waters of the State in such a way as to promote the policy and purpose of the Statute most effectively. Such a series of classifications and water quality standards was adopted, after considerable study, during the summer of 1953. These have been published and have been given wide distribution. However, we have copies with us and will be glad to furnish them to anyone who would like to have them. If anyone would like to have a copy at this time please raise your hand and Mr. Knight will be glad to see that you get your copy.

The second requirement of the program relates to the conduct of detail studies to determine sources of pollution and their magnitude, water uses and the quality of water that is now flowing in our streams. This is obviously a time consuming task inasmuch as it is necessary to collect and examine at least five, six, or seven samples of water from each sampling station. Such sampling stations are normally established above and below each source of pollution as well as in other selected points in order that the Committee may determine the existing condition of the streams being examined. Likewise, information concerning present and potential stream usage must be obtained in order to determine the proper classification to be assigned so that the stream or segment thereof may be protected in such manner as to provide water of such quality as to permit its continued usage for the purpose it must serve. This

portion of the program in the Roanoke River Basin has now been completed and the findings of our survey are contained in the Roanoke River Pollution Survey Report, copies of which some of you have just obtained and others had previously received through the mail.

The third portion of the program involves holding public hearings such as the one we are holding today, during which the public is given an opportunity to express its views with reference to the classifications that should be assigned to the waters of the basin and finally the assignment of classifications which the Committee considers to be in the best interest of the public.

At this time I would like for you to refer to the Rules and Regulations pertaining to the classifications and water quality standards which have been adopted by the Committee so that you may follow me during a brief outline of the various classifications available for assignment to the fresh waters of the State. There are six fresh water classifications. The first of these is Class "A-I", which is applicable to waters which serve as sources of public water supply where the only treatment provided is that of storage and/or chlorination. This requires a very high quality water; therefore, the stream must be very carefully protected in order to assure its safety as a source of public water supply. The second classification is Class "A-II", which is applicable to water used as a source of public water supply where normal or conventional water treatment facilities are provided, such as those at Raleigh or Leaksville. These facilities provide chemical precipitation, sedimentation, filtration, and chlorination. The third class is Class "B", which is applicable to waters used for bathing and other recreational purposes. The quality of water in this class must be maintained at a high level, particularly from a standpoint of bacterial pollution. The fourth class is Class "C", which is applicable to waters that must be protected as a suitable habitat for fish and wildlife propagation. Waters in this class do not have to be protected as carefully as waters used for bathing and public water supply, but must be of such quality as to promote the propagation of fish and wildlife. The fifth class is Class "D", which is applicable to waters which must serve as sources of water for agriculture purposes, including irrigation and livestock watering. The sixth class is Class "E", which is applicable to waters used primarily for navigation and the disposal of sewage and industrial waste. If such waters are used for the disposal of sewage and industrial waste, this usage must not be to such an extent as to result in nuisance conditions. This classification will not be assigned to waters which can, in the light of consideration prescribed by the Statute, be properly placed in a higher classification.

In studying our Roanoke River Pollution Survey Report, it should be borne in mind that the measurement of the effects of pollution discharges upon the stream is made difficult by the varied characteristics of different pollutants, the various requirements of water quality for different uses, irregular stream flows, the effects of tidal action, and the lack of simple devices and units available for pollution measurements.

In connection with the effects of pollution, we find that the quality of stream water may be impaired in several different ways (1) by pollution that increases bacterial loads such as domestic sewage, (2) by pollution that reduces the oxygen in the stream such as sewage and organic industrial

wastes, (3) by pollution that introduces solids or liquids that tend to either settle or float, thereby creating sludge banks or unsightly conditions, (4) by pollution that adds color, turbidity, acids, salts, or other objectionable characteristics to the water, and (5) by pollution of a definite toxic or poisonous nature. These pollutional effects may become apparent immediately below the point of discharge as in the case of floating solids and colored wastes, or they may not show up for several miles downstream. Likewise, some of the pollutional effects persist for very short distances, whereas others may persist for distances of miles and even hundreds of miles below the point of discharge.

The seriousness of any pollution problem is also influenced by the uses made of the receiving stream. For instance, a stream used as a source of public water supply would be more seriously affected by pollutants which would increase the bacterial content, than would streams used for agricultural purposes or for an industrial cooling water supply. Likewise, a stream used for fish propagation would be more seriously affected by toxic pollution than by pollution which increases the hardness of the water.

Inasmuch as pollutants vary in their effect upon streams and since the amount of such pollutants permissible is governed to a large extent by the stream usage, stream flow and other characteristics, such as velocity of flow, topography, water temperature, etc., it is logical that there would be no simple test that would indicate the presence and extent of pollution; hence, it is difficult to detect or evaluate pollution except through many analyses made over considerable periods of time and under conditions as near critical as practical. Operating schedules of industries sometimes result in slugs of wastes at infrequent intervals which tend to further complicate the problem and make it difficult to evaluate the seriousness of the pollution unless the sampling interval is frequent enough and sampling is carried on over a long enough period to catch the slugs of wastes.

In our discussions of the pollution in the Roanoke River Basin which is to follow, we are necessarily limited in time; therefore, the description of existing pollution and its effect upon the streams can be given only in general terms. This discussion, however, is based upon the data collected by actual laboratory analyses, field studies, and conferences over a period of more than a year and under varying conditions. We feel, therefore, that the report represents an accurate picture of present stream conditions.

The problem is also seriously affected by stream flows. The volume of water flowing in a stream receiving discharges of sewage or industrial wastes is a prime consideration in determining the amount of pollution a stream can carry without harmful effects and, therefore, greatly influences the pollution abatement needs. Also, the existing quality of the water into which the pollution is discharged, as well as the stream usage, must be given thorough consideration. In arriving at the allowable amount of pollution that can be safely discharged into a given stream, these together with other factors, such as flow regulation by dams, tidal effects, etc., will be given due consideration.

Under natural conditions stream flow will vary over a wide range. High flows usually occur during the winter and early spring months when temperatures are low. Dry weather or low flows ordinarily occur during the summer and fall

months when highest water temperatures prevail. We have dry years and wet years and the stream flow will vary accordingly, and there is nothing we can do about it. In view of this, we have to provide adequate corrective works for treating the sewage and wastes to such degree as will protect the stream during the critical periods.

When dams are constructed on streams to impound the waters, records of natural stream flows no longer hold true. Obviously, in such cases the flow in the stream for some distance below the dam will depend upon the amount of water released from the dam and will fluctuate accordingly. Likewise, natural stream flows do not hold true in waters affected by tides.

The stream flow data, watershed areas, and stream mileages given in the report were furnished by the Raleigh District Office of the U. S. Geological Survey under the terms of a cooperative program between that office and the State Stream Sanitation Committee. The flow data recorded in the report represent the stream flow at the time samples were collected and do not represent critical flow conditions.

In the report, we have attempted to present our findings with reference to the uses now being made of the streams as well as those which may be made in the near or foreseeable future. The data concerning the present and potential future uses of the water for public and industrial water supply and for sewage and industrial waste disposal were obtained through plant studies and from the files of the State Board of Health. Information pertaining to the use of the various waters for bathing and recreation was obtained from the County Health Departments and the Division of State Parks of the State Department of Conservation and Development. Data on water use for fishing were furnished by the staff of the North Carolina Wildlife Resources Commission. The County Farm Agents were interviewed for data on livestock watering and irrigation. Information concerning other related uses was obtained through interviews with interested individuals and by field investigations. A sincere effort was made by our investigators to determine as accurately as possible what uses the streams are now serving and what probable uses the streams in this area must serve in the future. We believe that by contacting various people with whom we have worked, we have been able to obtain fairly accurate information. It is quite possible, however, that some of the significant stream uses may have been overlooked. If so, we hope that you people will point out any uses or conditions that exist which our studies have not disclosed. On the other hand, we believe that the information we have represents the major uses being made of the streams in the Roanoke River Basin.

This concludes the first portion of the hearing and I hope that my comments will enable you to better understand the purpose of this hearing, the requirements of the Statute, as well as the aims of the program which the Committee is attempting to establish for the protection of the streams in North Carolina.

The next portion of the hearing will involve a detailed discussion of the classifications suggested for the waters in the upper portion of the basin. This part of the program will be conducted by Mr. W. E. Long, Jr., Chief, Pollution Control Section of the State Stream Sanitation Committee.

Mr. Long will attempt, by use of this map which has been colored to show and explain the various classifications suggested for the waters in the area. In this connection, we do not intend to imply that the suggested classifications will meet with the approval of all of the people present. In fact, we are requesting that those who disagree with the suggested classifications should feel free to present their views as to why same are not satisfactory. In this respect, we must request anyone desiring to speak to come to the microphone and speak directly into it, stating their name and address so that they may be properly identified and so that their remarks may be accurately recorded. This procedure is absolutely necessary in order that we may prepare a verbatim report of the proceedings of this hearing. This report will be sent to the people interested in the problem and may be reviewed by the Committee before the official classifications are assigned. At this time I would like to introduce Mr. Long, who will discuss the findings contained in the report and present the recommended classifications for the upper portion of the river basin.

Mr. W. E. Long, Jr., Chief, Pollution Control Section, State Stream Sanitation Committee, Raleigh, North Carolina: Mr. Chairman, members of the Committee, ladies and gentlemen, if you care to follow me in the report, you will find the explanation of the recommended classifications on page 157. The recommended classifications for the surface waters of the Roanoke River Basin are given in Table 7, pages 158 to 170. These recommendations are considered to represent the best usages of the streams in the interest of the public and are submitted to all concerned for consideration at the Public Hearing. Any stream not named in Table 7 carries the same classification as the segment of the stream to which it is tributary.

As Mr. Hubbard pointed out, we have six classifications of fresh water. They are explained in detail in the little white booklet which he mentioned. If you want more details of these classifications, be sure and pick up one of these booklets before the hearing is over. But to review briefly what each one stands for, they are as follows: "A-I" water means that the quality will be such that it will be suitable for drinking water with only chlorination. Obviously, we don't have any of that quality of water in this area so we don't have to worry about that. The only place we have that kind of water is in the western part of our State, places like Asheville and Hendersonville, but we do have "A-II" waters. That means the quality will be such that the water can be used for public water supplies with approved treatment, and it is indicated on our map here in the blue color. For "B" waters - the quality will be such as to be suitable for outdoor bathing. They are shown on the map in an orange color. "C" waters - the quality will be such that they will be suitable for fishing and are shown on the map in the green color. "D" waters - the quality will be such as to be suitable for agricultural purposes, including irrigation and livestock watering, industrial cooling and process water supply. These are shown on the map in red. We have a final classification - Class "E". The quality of such water will be such as to be suitable for navigation where navigation is possible and for the disposal of sewage and industrial waste or other wastes.

Keeping those classifications in mind, "A-I", "A-II", "B", "C", "D", and "E", we have a yard stick which we can apply to the streams in this area and see how they measure up against the best usage we have found that the people

are making of these waters. Now if you will please turn to page 158, I shall explain briefly how these are shown in the report. First you notice the Roman Numeral. The Roman Numeral indicates that portion of the main stream or main tributary as number I, the Dan River from the North Carolina-Virginia State line to Leaksville Water Supply Intake. That's a main tributary to the Roanoke River. The streams indicated in capital letters are tributaries of that main stem. The streams shown in Arabic numbers are tributaries to the lettered streams, and the little letters are tributaries to the numbered streams. I hope that's clear to you.

With that in mind I shall not take time to read the whole table, but since our recommended classifications are based on the best usage that we have found being made of the waters in a particular segment, I shall read only the best usage and the proposed classification with any comments that we might have pertaining thereto.

(Note: Mr. Long presented the recommended classification for each stream in the upper portion of the river basin as contained on pages 158 through 166 of the Roanoke River Pollution Survey Report.)

Senator Whitfield: Thank you Mr. Long. You see from this map that it is no easy job to undertake the classifications of a major river basin. We not only have to give the classifications of the main stem of the river, but also the creeks and the larger branches. It has been estimated by competent engineers that it will take $12,000,000,000 to clean up the streams in the United States. You cannot spend, as I have said time and time again, a century or more polluting the streams of your nation or state and press a button and clean them up over night. It takes about two years for our technical staff and ourselves to prepare a report of this kind. We have to be fair to municipalities, we have to be fair to industry, and above all we have to be fair to the State of North Carolina, and the people in the river basin involved. The trouble is, we waited too long to start cleaning up the streams of North Carolina. It wasn't a popular plan. Mr. Satterfield, Mr. Gunn, and Representative Warren, who was here earlier, were valued members of the Legislature in helping get this program underway. I recall as if it were yesterday that when I introduced the first bill in 1947, even my friends said I ought to have my head examined; I ought to go to Dix Hill; why in the world did I want to make myself so unpopular by introducing a bill of this kind since it didn't have a ghost of a chance. Well, it didn't. I couldn't even get it out of the Committee in 1947. In 1949 I got it out of the Committee but it was defeated in the House by eight votes. Public opinion was beginning to swing behind me in my efforts to get a Stream Pollution Bill passed. To show you how public opinion has swung behind this program, in 1951 it passed the House by 98 to 14. Naturally that was a very happy day for me, but we still had a battle in the Senate Committee; however, it finally got through the Senate Committee by one vote. I relate this little history to show you how public opinion is swinging behind our program.

We are here today for one purpose, that of trying to classify properly for your welfare and the State or North Carolina's welfare, the waters in the upper basin of the Roanoke River. Up to date, we have classified the Yadkin, Chowan, and the White Oak River Basins. The White Oak River Basin includes the waters adjacent to Morehead City and Beaufort. Governor Umstead was particularly anxious for us to study and classify that basin because he wanted to clean up the situation adjacent to Morehead City and Beaufort. It is a tremendous task. The next river basin to be classified is the French Broad-Pigeon up in the west, then the Cape Fear, Neuse, Catawba, and the Tar-Pamlico. It will take us until 1961 to complete our studies and assign classifications to waters in the major and minor river basins of North Carolina. It seems inconceivable that it should take that long a time, doesn't it? But it has to be done right. That's why we are here. And it's going to be done right. We are not here to put any industry out of business. But we are here to see that industries and municipalities clean up and cease to be a nuisance.

We had a case in one of the river basins where we had to tell an industry it would take them five years and an expenditure of $2,000,000 to clean their stream up to where it would cease to be a nuisance. Did they fight it? Not at all. We haven't had anybody to fight it. They are cooperating, that is the fine thing we appreciate. North Carolina is on the march and we know that our municipalities and industries are going to clean up our streams. We have to provide for new industry. We also must realize that new industry should not come in and pollute the surface waters at will. They must help keep the streams clean. It's for their best interest in the long run, which means the welfare of North Carolina in the long run. The welfare of the people of this State must come first. I don't have to tell you that through the years history shows repeatedly where nations have fallen or disappeared because of the water problem, both from lack of water and from pollution. Conservation is the problem.

I wanted to make these comments before we hear those who have indicated they wish to be heard, and we want to hear everyone. I hope those of you who have indicated you do not wish to be heard, as well as those of you who have not said anything on the form, will reconsider your decision and say something. We will be very happy to have you make any comments you wish. Just remember, we are your Committee; we are North Carolina's Committee. We are here to do the job. We are not a punitive Committee, but we are going to, as we have the power, clean up the streams of North Carolina and provide for adequate water resources for new business and new industry, if they will obey the law.

Isn't it strange why we have to have laws? We do. You know Saint Paul said, somewhere in Galatians I believe it was, "If righteousness come by law, then Christ has died in vain." We are a long way off from being Christians, aren't we? We have to have law and we Americans are notorious for not abiding by law. We like to violate the law. If you don't believe that, just get on the highways.

Our law is a fair law and your Committee, as I say, is dedicated to the task of cleaning up North Carolina and providing for adequate water resources for new industry, but we don't want any industry to come to North Carolina with the idea that they're going to pollute at will. It is not to their best

interest and certainly not to the best interest of the State. On the other hand, if we work together we can find a solution. We have just spent 18 months working with an industry which proposes to build a $50,000,000 pulp mill on the Neuse River and we satisfactorily solved the problem. Just remember this, if you don't remember anything else, people of good will working together can solve any problem that has to be solved. That's the spirit in which we want to do the job, but remember, we are going to protect the welfare of North Carolina. Now, Mr. Hubbard, you can introduce the people who want to be heard.

Mr. Hubbard: Ladies and Gentlemen, you have heard the presentations during the first and second portion of the hearing. We have now reached that portion of the hearing during which each of you will be given an opportunity to express your views to the Committee with reference to the matter under consideration. I have the forms which you have completed since coming to the hearing. Some of you have indicated a desire to be heard, while others have not indicated whether you desire to be heard or not and some have indicated definitely that you do not wish to make any comments. As Senator Whitfield has just mentioned, we hope that during the progress of this hearing something may have occurred to you that you would like to say to the Committee. If so, you certainly will be privileged to make any comments you wish. I think though, in the interest of simplifying the proceedings, it would be well if I recognized those who have indicated that they definitely wish to speak and then introduce those who have not indicated that they wish to be heard. In this manner, the rest of us will know who is present and if at the time you wish to be heard on any matter, your comments will certainly be appreciated. The first person who has indicated that he would like to be heard is the Honorable Richard G. Long, State Senator from Roxboro. Senator Long, we would be glad to have your comments.

The Honorable Richard G. Long, State Senator, Roxboro, North Carolina: I am Richard Long, from Roxboro, and I want to make a suggestion to the Committee that the classification of Marlowe Creek be changed from the proposed classification of "D" to "E". Marlowe Creek is a tributary of Hyco River, which is a tributary of the Dan River. It is a short stream originating slightly to the south of the Town of Roxboro, running through the corporate limits of the Town, past the large industrial plant of Collins and Aikman Corporation, which is a dyeing plant, and then through a rather barren area, a distance of six or seven miles, into Hyco Creek, Hyco River I think it's called. Marlowe Creek has been used by the City of Roxboro as its sewage disposal plant ever since Roxboro has existed. It traverses lands which are not extensively farmed. Much of the area which it traverses are bad lands; they are rocky in the southern area of the course of the stream and they are marshy as it nears Hyco. Now, whether it is because Roxboro has so long polluted it, or for what other reason I do not know, but it is not used for pasture lands, or for watering stock. It has been Roxboro's method of disposing of its effluent for a long time.

Roxboro is situated on a ridge and directly to the south of Roxboro the watershed begins to flow into the Durham watershed. So we are limited in disposing of our sewage to a northerly direction going into Hyco. Our railroad tracks follow fairly closely the course of Marlowe Creek. Our major highways are admirably suited for juncture of rail connections, sewer connections and City water supply, so that any industrial development that Roxboro does will most logically take place along the area of Marlowe Creek.

We realize, of course, the job that the Committee is trying to do and that the Legislature had in mind, and we want to be very cooperative with the program. The Town of Roxboro has every intention of constructing modern sewag disposal facilities when it is financially able to do so. If we are required to abate the existing condition of Marlowe Creek at the present time, we will have to curtail some of our efforts for new industry, and Roxboro has been a very progressive town in that regard. We have acquired quite a lot of new industry. We are now in the midst of negotiations for others and with one particularly large industry, the disposal of its effluent is a major factor. Perhaps the thing that we really want is a little more time. We have a progressive community; we've built a new filter plant and new water lines to our industries. We have a great deal of civic pride in that area, and we do not want to continue to pollute the stream indefinitely, but we are in a relatively fortunate position of having only fifteen land owners between the Collins and Aikman Plant and the juncture of Marlowe Creek with Hyco River. If we can have Marlowe Creek placed in an "E" Classification, we feel that our chances of getting this one particular new dye plant will be very greatly enhanced and you gentlemen with your technical facilites and your staff, are in a better position than any of us to tell what effect the additional effluen from a new plant would have on Hyco Creek. Hyco is relatively clear and to the naked eye it appears that the present wastes from Roxboro and its industrial plants do not materially affect Hyco. We have requested the Stream Sanitation Committee, in cooperation with the North Carolina Department of Conservation and Development, to make tests with regard to the particular industry which we now seek.

It is not our intention to evade the responsibility which we recognize that municipalities and industries have in cleaning up our streams. It is our desire that, for the time being, we be allowed to continue using the streams as we have in the past subject to the limitation of it not becoming a public nuisance because we feel in this particular case there's no injury to the public at large. I see no representative of the fifteen land owners along the creek having any opposition to it. We have talked with some of them and we have the definite approval of some of them for an "E" Classification. We have no disapproval from any of them, and I respectfully urge you to consider reducing Marlowe Creek to a Class "E" classification. Thank you very much.

Mr. Hubbard: Thank you, Senator Long. Are there any of the members of the Committee who would like to ask Mr. Long any questions about his proposal? If not, we have with us Mr. W. F. Timberlake, City Manager of Roxboro, who has indicated he would like to offer comments. Mr. Timberlake, will you come to the microphone?

Mr. W. F. Timberlake, City Manager, Roxboro, N. C.: (His statement could not be recorded because he did not come to the microphone)

Mr. Hubbard: Thank you, Mr. Timberlake. The next person whom I would like to introduce is Mr. P. D. Davis, Consulting Engineer for the Town of Roxboro. Mr. Davis.

Mr. P. D. Davis, Consulting Engineer, Durham, North Carolina: Mr. Chairman, members of the Committee and Mr. Hubbard. I'd like to endorse what Mr. Long has said regarding Marlowe Creek. The flow in Marlowe Creek is quite small. It is a small drainage area. It originates in and flows through the City of Roxboro and picks up the pollution along the drainage area which is common to any stream that serves as a storm water takeoff stream for municipalities. The flow in Marlowe Creek is quite small during the critical flow

periods of the year. I made a few figures based on the analyses contained in the basin report. These figures indicate that the minimum flow of Marlowe Creek at the station near Longhorse Mill, at the time the investigation was made, would carry with it approximately 20 pounds of dissolved oxygen. The stream flow is small. The stream's oxygen content was near the saturation point. The estimated population served in Roxboro as taken from the report, is some 6,000 people. The population equivalent of the industrial wastes from the Collins and Aikman Mill is estimated at 4,000, which is a total of some 10,000 population equivalent. That indicates a B.O.D. demand of some 2,000 pounds a day which must be taken care of. If the City of Roxboro builds a modern sewage treatment plant and operates it at its best efficiency, I think we might anticipate from 85 to 90% top efficiency in such a plant. That would leave us 10% of the 2,000 pounds of oxygen demand to discharge into a stream which has only 20 pounds of oxygen in it to absorb the pollution. That, in my opinion, indicates the need for the lowest classification that you gentlemen see fit to approve for Roxboro. It is the Town's intention, as expressed to me, to go ahead with the requirements of sewage treatment and industrial waste treatment and do as much as they can to alleviate the condition of the stream.

Roxboro is, perhaps, in a unique position in that I have another request to make regarding another stream in which case I'd like to ask you to increase the classification to a higher classification. In a report which we made to Roxboro in 1930 on water supply, we had this statement: "The nearest source of supply which would appear to be sufficient for all your future needs is South Hyco Creek below Richland Creek. This is between 4½ and 5 miles from your existing water works lake and approximately 7 miles straight across country from your present filter plant site. No investigation has been made to determine satisfactory sites." Since that report was made, and following the problem of financing and other problems incident to the construction of a new plant, Roxboro has moved the site of its treatment plant nearer its source of raw water supply and they have constructed a 3,000,000 gallon filter plant for the treatment of water. A following program has further investigated the source of raw water supply, and in a report of 1954 on additional raw water supply only, we referred again to our earlier report of 1940 and stated that it was still our opinion that the South Hyco Creek was the eventual source of a permanent future water supply for Roxboro. The cost of constructing the treatment plant placed a rather heavy burden on Roxboro so far as finances are concerned and rather than to recommend the development of Hyco Creek at that time, we recommended the construction of additional raw water facilities on Satterfield and Story Creek just below their existing supply. That construction was completed about a year ago and has increased the raw water supply to where it is now on a par with the water treatment plant. So any further development on Hyco River will be postponed until Roxboro grows a bit more. In our opinion, following two investigations, Hyco Creek is the eventual source of water supply for Roxboro as it grows and we would, therefore, like to respectfully request your consideration of increasing the classification of the main stem of South Hyco Creek above Richland Creek to Class A-II for water supply. Thank you.

Mr. Hubbard: Mr. Davis, your request is to the effect that the Committee change the classification on South Hyco Creek, above the mouth of Richland Creek, from the suggested classification to Class A-II?

Mr. Davis: Yes, and let's make a definite selection as to a point where the creek would be developed and it would require impounding.

Mr. Hubbard: Mr. Davis, there's one question that I would like to ask you for clarification. You will note that we have indicated an A-II classification down to the dam that impounds Chub Lake. Where in relation to that dam is the present water supply intake located? Is it at the dam or above?

Mr. Davis: The intake for the supply at Roxboro is above the headwaters of Chub Lake. The dam is probably a mile above the backwater in Chub Lake and the classification for Chub Lake could be changed from below the dam of the new Roxboro lake, which is on Cecil Road, to some lower classification without hurting the City of Roxboro in any way. The development now on those two creeks is as much as we could economically do.

Mr. Hubbard: Is Chub Lake used for recreational purposes, particularly bathing?

Mr. Davis: I don't know. It's used for fishing and I imagine for bathing too, but I've never seen anybody in it. Someone else will have to answer that question.

Mr. J. W. Green, City Commissioner, Roxboro, North Carolina: I'm J. W. Green, Commissioner of Roxboro.

Senator Whitfield: Excuse me. Are you through Mr. Davis?

Mr. Davis: I am through unless you have further questions.

Mr. Green: At the present time Chub Lake, as Mr. Davis said, is not used as a source of water supply for Roxboro, but it is used for bathing purposes and for boating and fishing.

Mr. Hubbard: Is it organized bathing or miscellaneous bathing, Mr. Green?

Mr. Green: It's owned by an individual who allows bathing and at one time, I believe last year, they had a lifeguard out there, so I guess you would call it organized bathing.

Mr. Hubbard: Do they charge a fee for bathing in the lake?

Mr. Green: I believe that is correct, sir. I know they had a lifegurad and a bathhouse.

Mr. Hubbard: It would be appropriate in that case, to assign a bathing classification to Chub Lake rather than some lower classification?

Mr. Green: I believe so because I think it will continue to be used for bathing purposes.

Mr. Hubbard: That was the information I wanted to get. Thank you very much, Mr. Green.

Mr. Davis: Are there any further questions you wish to ask me?

Mr. Hubbard: I have no further questions Mr. Davis. Perhaps a member of the Committee has a question.

Mr. J. N. Vann, Member, State Stream Sanitation Committee, Ahoskie, North Carolina: Mr. Davis I would like to ask one question. What classification do you propose for Marlowe Creek?

Mr. Davis: Class "E".

Mr. Vann: I thought Senator Long said, "Class "E" and I just wanted to ask you what classification you suggest.

Mr. Davis: I don't think we will have much trouble meeting Class "E" requirements because there isn't much difference in "D" and "E". There is a possible difference of an unsightly condition that would not produce a nuisance other than a visual nuisance. There is some color in the dye wastes and the oxygen content of the two classifications is the same thing which is about the minimum you can get by with. Aside from this particular consideration, it seems to me that in this question of stream protection, we are soon going to be faced with the impoundment of excess water during the winter for the purposes of sewage dilution. Whether that's going to be one of the conditions on Marlowe Creek which would be obligatory if we meet the conditions required by the classification, I don't know. If it should turn out to be so, then we would have to move down the creek far enough to make room to put a dam above the point of waste discharge and store the water. Those are some of the things that a number of us have been thinking about in connection with these small and heavily polluted streams. We don't know what we are going to do. Thank you very much.

Senator Whitfield: I would like to take a minute to point out one matter for you people of Roxboro to consider in connection with the proposed new industry. Of course we want new industry. But, have you thought about the fact that the new industry that's considering coming here will, as I understand it, turn loose one-half million gallons of pollution into Marlowe Creek in addition to what you have now?

Mr. Davis: I'm not familiar with the industry Mr. Whitfield.

Senator Whitfield: I just wanted to point that out.

Mr. Davis: Yes, I understood that. Senator Long mentioned the industry. I had no information whatever on the characteristics other than I had discussed it in general with Senator Long.

Senator Whitfield: We want you to be thinking about that point. A new textile industry would turn loose considerable waste in addition to the pollution you have now. You stated that you would have difficulty in bringing the creek up to an "E" Classification. Your difficulty would increase many folds. You realize that a half million gallons of pollution would be added to your present load?

Mr. Davis: That is quite true.

Mr. Hubbard: Thank you, Mr. Davis. The next person whom I would like to introduce, I believe has already spoken to us, but in order that you may know who was speaking, I'd like to recognize Mr. J. W. Green, City Commissioner, Town of Roxboro. Mr. Green, we would be glad to hear any other comments you may have.

Mr. Green: I haven't any.

Mr. Hubbard: We have with us Mr. C. M. Michie, Town Commissioner, Town of Roxboro. Do you have any comments, Mr. Michie?

Mr. C. M. Michie, Town Commissioner, Town of Roxboro, N. C.: No comments.

Mr. Hubbard: Thank you for being present. We are glad to have you. The next person whom I would like to introduce is the Honorable B. I. Satterfield, Member of the State Legislature from Timberlake, North Carolina. Mr. Satterfield, do you have any comments or observations? If so, will you please come to the microphone?

The Honorable B. I. Satterfield, Member of the State Legislature, Timberlake, North Carolina: Mr. Chairman, I believe I indicated on the slip I filled out that I had no comments, but it's hard for me to attend a meeting of this type and remain silent. I think I turned from a Methodist to a Quaker. I think the spirit has moved me as we go along in this meeting. Especially, I was brought around to making a few remarks when I heard the Chairman make his comments with reference to the fight that we had here in this State in order to secure legislation to provide for stream sanitation.

I have been exposed to some very powerful lobbies in the State Capitol. I don't think there has ever been a lobby more powerful than the one we faced in 1951 when this law was passed providing for stream sanitation in North Carolina. At that time, the great industries in this State which had been permitted to pollute the streams and the cities and municipalities in North Carolina who were dumping their sewage into many of the streams of the State were sure that time would be given for them to negotiate with the City Councils and to make arrangements whereby the streams of this State might be brought up, certainly part way, to the standard that we all felt they should be. I have, through the years, watched with a great deal of interest the progress that has been made. I think, Mr. Chairman and members of the Committee, it is well known to everyone that a lot of our people in this State are rather impatient now that stream sanitation has not been brought out any more rapidly than it has. We had the example in the past Legislature, of course, over here at Haw River where the citizens who lived on that river came before the Legislature and perhaps were as enthusiastic a group as I have ever seen there, and asked that something be done immediately for the cleaning up of Haw River. Haw River, as you people here know, receives the refuse from the City of Greensboro and from the industries which are close by the river. It seems only natural that it would be a very sore spot in the minds of the people. I have forgotten the name of the lady, but I remember one particular lady with a great deal of enthusiasm making a plea that she wanted something done because it was impossible to live close to the river at certain times due to the odors and so on. I heard just recently that lady said, "I want this to happen in my life time". She was a stout lady, and in excellent health. I heard just a short while ago that the particular lady had passed away.

Now the only reason that I am saying this is because this State is a State that wants things done in a reasonable time. It is, Mr. Chairman, I feel an impatient State. We want, without a doubt in my mind, those who have been polluting the streams in this State to take the necessary steps as soon as possible so the waters will not be polluted. I, for one, am particularly anxious that new industry come to this State. I think in the coming of this industry to the State that if it is the type of industry we want in our State, it will want to comply with our stream sanitation program. After all, the streams of

North Carolina belong to the people of North Carolina and the waters that may be in the streams in my county and in the streams of your county will, of course, depart from our county and go into other streams and thereby result in other stream pollution.

So I think, Mr. Chairman, about all that I could say this morning would simply be that the water resources of this State, of course, are of vital concern to all of us from many angles and particularly from the standpoint of industry and agriculture. There are a great many people in North Carolina who are embarking upon the livestock industry, and there are many streams in North Carolina, that overflow their banks when it rains and floods the low lands and meadow lands, contaminating the grass to the extent that it is of no use for grazing purposes. When you, Mr. Chairman, and the members of the Committee, make your decisions about this thing, as you so well stated, it is necessary that we treat all of these things with the view to doing what is best for the great State in which we live.

Mr. Hubbard: Thank you very much, Mr. Satterfield. The next person whom I would like to recognize is Mr. D. F. Aderholdt, Chief Chemist with the State Water Control Board of Virginia. Mr. Aderholdt, we would like to have your views, since this matter also affects your state.

Mr. D. F. Aderholdt, Chief Chemist, Water Control Board of Virginia, 5500 Whitlone Dr., Richmond, Virginia: I'd like to express to the Committee and to the staff of the North Carolina Stream Sanitation Committee, the best regards of the Virginia Water Control Board and to assure you of our cooperation. I cannot speak for the Board itself but the past experience has been that they have been good neighbors to North Carolina and I feel sure you can count on that in the future.

Senator Whitfield: May I say, Ladies and Gentlemen, that the relationship between the Virginia Board and our Committee has been excellent. We have worked together in complete harmony. I would like to emphasize a point right here at this time, which I consider appropriate since Mr. Aderholt has made his remarks. We have to look out also for the water supplies of Towns in Virginia near the North Carolina Line. They have to look out in their stream sanitation program for the water supplies of streams in North Carolina near the line. So you see, we sometimes find that our problems, although they may not affect North Carolina, may seriously affect Virginia, or some city or town in Virginia. The same situation exists up on the Tennessee line. It's a tremendous problem and I'm sure you realize the importance of the problems involved.

We don't mind spending seven cents a gallon tax for our gasoline to build roads, but may I say right here that it is just as important, if not more important, that you realize money has to be spent to maintain adequate water supplies. May I also point out this, and please remember this if you don't remember anything else I've said here this morning, that civilization has fallen more often for the lack of adequate water and because of polluted water than for any other economic cause. I've never known of a civilization to fall because they didn't have paved roads. Now, I think you see the point. We like to travel, we've got to travel, we've got to have our highways no matter how much they cost, but water is even more important than highways. Can you visualize the problem we are having in the southwest today due to lack of water? It's also becoming acute in North Carolina. The secretary and I this

morning offered a solution to ourselves. We said we were going to save water by returning to bathing only on Saturday night. We can save some water that way. But seriously, the water problem - the lack of unpolluted water - will destroy civilization quicker than the lack of roads.

I'm sure you realize that we are here to represent you and the State, to give you a square deal which we are going to do. We want to have your suggestions; that's why we are asking for them. We are not making any decisions here this morning. It will be 30 days before we render any decisions for the requested changes. We are going to be absolutely fair, and we hope anyone who has any comments to make for changes will speak. As we said in the beginning, these classifications are tentative. Of course, most of the suggested classifications will remain and become permanent. We want to be fair; we want to hear your case, and we are going to be absolutely impartial and fair. I just wanted to say, please remember when we are along this Virginia - North Carolina line, that we have to look out for the cities of Virginia and their water supply, just as much as we do the cities of North Carolina. They, likewise, when classifying streams coming into North Carolina, have to look out for supplies of water used by North Carolina cities.

Mr. Hubbard: The next person whom I'd like to introduce is Mr. Edward B. Bradley, Fisheries Investigator for the North Carolina Wildlife Resources Commission, who is located in Burlington. Mr. Bradley, do you have any comments to offer at this time?

Mr. Edward B. Bradley, Fisheries Investigator, North Carolina Wildlife Resources Commission, Burlington, North Carolina: No I haven't.

Mr. Hubbard: We have with us Mr. L. A. Alley, who is Consulting Engineer for the Yanceyville Sanitary District. I would like to recognize Mr. Alley for any comments he has.

Mr. L. A. Alley, Consulting Engineer, Yanceyville Sanitary District, Yanceyville, North Carolina: Thank you Mr. Hubbard. Mr. Chairman, Members of the Committee and Mr. Hubbard. I would like to call your attention to page 16 of the report. Country Line Creek which is numbered here as "L" is classified as "C". Country Line Creek, the portion of it above Highway 62, has been considered by the Yanceyville Sanitary District as its future supplemental source of raw water and the District would like to see it protected by raising the classification from "C", for that portion of Country Line Creek above Route 62 to a higher classification. Country Line Creek below the bridge is classified here as "C". The District, in view of the fact that Country Line Creek flows primarily through a manufacturing area, would like to see the classification changed from "C" to "D", which is the classification used for streams passing through primarily manufacturing areas and whose use is going to be primarily fo agriculture. One small item here, which is not too important, but I would like to call it to your attention. Fullers Creek, which is the stream from which Yanceyville gets its permanent water supply, is listed here as being a tributa of Moon Creek. Actually it is a tributary of Country Line Creek instead of Mo Creek. Fullers Creek is the name that appears on the bridge just below the impounding dam, but it's referred to here by another name and perhaps that is wha led to the confusion.

Senator Whitfield: Perhaps Mr. Long and the Yanceyville folks better get together for a few minutes after the meeting and get these creeks named right. Sometimes it's hard to find a creek. For example, down at Jacksonville the New River, there are several creeks down there with no name whatsoever.

Mr. Alley: They are all the comments that I have, sir.

Mr. Hubbard: Mr. Alley, I'd like to ask one question, and that's in connection with Country Line Creek. You suggest that below the proposed water supply intake the creek be classified as Class "D" rather than Class "C". Inasmuch as Class "C" would also protect the water suitable for agricultural purposes, is there some other reason for lowering the classification below that of Class "C"?

Mr. Alley: Well, frankly, below the bridge the sewage from Yanceyville now enters into a tributary of Country Line Creek, called Jailbranch Creek and the Yanceyville Sanitary District felt that possibly it would be slightly less expensive to build a sewage treatment plant that would handle the sewage entering a Class "D" stream rather than a Class "C".

Mr. Hubbard: Your object in requesting that the lower portion of Country Line Creek be classified as "D" instead "C" as proposed is to ease the pollution abatement problem for the Yanceyville Sanitary District in relation to its sewage disposal?

Mr. Alley: Correct.

Mr. Hubbard: That is the point I wanted to bring out for the Committee. Thank you very much, Mr. Alley. The next person is Mr. John O. Gunn, who, I believe, is the Chairman of the Yanceyville Sanitary District Board. Mr. Gunn, would you like to make a statement?

Mr. John O. Gunn, Chairman, Yanceyville Sanitary District Board, Yanceyville, North Carolina: Mr. Chairman and members of the Committee, I would like to take this opportunity to welcome you to our little Town of Yanceyville. I think it's find that you could come and meet in our community for this important meeting, and as a member of our local Town Committee, I'd like to pledge you the cooperation of our community in the effort you are making to clean up the streams of North Carolina. I don't know too much about the classifications here and what it takes to meet certain classifications. It may be that Country Line Creek below our Imhoff tank will presently qualify for Class "C". I don't know, but we want to cooperate with the Committee and communities in the fine work that you are doing for the State. We are glad to have you in our midst for this meeting. Thank you.

Mr. Hubbard: Thank you, Mr. Gunn. I would like to say that the Committee appreciates the courtesies shown them and their staff in arranging this meeting for Yanceyville and in its conduct. We appreciate it very much, sir. We also have with us from Yanceyville, the Secretary to the Sanitary District Board, Mr. H. W. Harper. Mr. Harper.

Mr. H. W. Harper, Secretary, Yanceyville Sanitary District Board, Yanceyville, North Carolina: I have no comments.

Mr. Hubbard: Thank you very much, Mr. Harper, for being with us. The next person whom I would like to recognize is Mr. O. C. Thompson of South Charleston, West Virginia, who is Co-ordinator for Waste Abatement for the Carbide and Carbon Chemical Company, a division of the Union Carbide and Carbon Corporation. Mr. Thompson, we would be glad to hear any comments you have.

Mr. O. C. Thompson, Co-ordinator, Waste Abatement, Carbide and Carbon Chemical Company, South Charleston, West Virginia: No comments, sir.

Mr. Hubbard: Thank you very much, Mr. Thompson, for taking your time to come down and be with us this morning. We have with us Mr. W. B. Lucas, who is Assistant Secretary, Fieldcrest Mills, Inc., of Spray, North Carolina. Mr. Lucas, would you like to make a statement?

Mr. W. B. Lucas, Assistant Secretary, Fieldcrest Mills, Inc., Spray, North Carolina: No comments.

Mr. Hubbard: Thank you for being present. Representing the Town of Spray, we have Mayor Harris M. Nelson, Jr. I would like to recognize Mr. Nelson and offer him an opportunity of making any comments he would like to offer. - - He has already left the room. We also have with us from Spray, representing the Rockingham County Health Department, Mr. G. A. Kunze, Sanitarian. Mr. Kunze, would you like to say a few words?

Mr. G. A. Kunze, Sanitarian, Rockingham County Health Department, Spray, North Carolina: No comments.

Mr. Hubbard: We appreciate your interest in being here, Mr. Kunze. We are always glad to have you present. We also have another member of the Rockingham-Caswell District Health Department, Mr. R. Y. Nance, Sanitarian with the department. Mr. Nance.

Mr. R. Y. Nance, Sanitarian, Rockingham-Caswell Health Department, Spray, North Carolina: No comments.

Mr. Hubbard: We have with us Mr. C. W. Roberts, Mayor of the Town of Leaksville. Mr. Roberts, would you care to make a statement?

Mr. C. W. Roberts, Mayor, Town of Leaksville, Leaksville, North Carolina: No sir.

Mr. Hubbard: Thank you, sir. Most of the people I'm introducing at the present time have indicated that they did not think they would have comments, but I'd like to introduce them and maybe they have thought of some remarks they would like to make. The next person is Mr. B. C. Trotter, of Leaksville who is Attorney for Fieldcrest Mills. I would like to introduce Mr. Trotter, and give him an opportunity to be heard.

Mr. B. C. Trotter, Attorney, Fieldcrest Mills, Inc., Leaksville, North Carolina: Mr. Chairman, thank you very much. I have no comments to make except to say we are down here to listen and learn. We don't know enough about the classifications to come down here and talk about them. We have great faith in the Committee, that it will do its work in a way to clean up the streams and at the same time will not disrupt industry that is here or industry that may anticipate coming to North Carolina. Industry and municipalities, I believe, will cooperate with this Committee in the work it is trying to do. Thank you.

Mr. Hubbard: Thank you very much, Mr. Trotter. The next person to be introduced is Mr. J. F. Kemp, Clerk-Treasurer of the Town of Leaksville, North Carolina.

Mr. J. F. Kemp, Clerk-Treasurer, Leaksville, North Carolina: No comments.

Mr. Hubbard: We have with us Mr. C. W. Mengel, Consulting Engineer of the firm of W. C. Olsen and Associates. He represents the Towns of Leaksville, Spray, and Draper. Mr. Mengel, do you have any comments you would like to offer?

Mr. C. W. Mengel, Consulting Engineer, Wm. C. Olsen & Assoc., P. O. Box 271, Raleigh, N. C.: Mr. Hubbard, there is just one point I would like to call to the attention of the Committee. I wish to call to the attention of the Committee the progress these three communities have made during the past five years, especially Draper and Spray. Both of those towns have gone to great expense in providing water and sewer systems for their people. They have spent, the two towns together, close to a million and a half dollars, which you people know represents quite a debt. In all, I think the classifications are fair. I think that the officials of the Town think they are fair. I think they have every confidence in the Committee that they will do the fair thing by them. The only reason that I have for talking is to point out the fact that it's going to take a little time and I'm sure that you will work with them and they will work with you.

Mr. Hubbard: Well, in that connection, I think I can express the feeling of the Committee by saying that inasmuch as many of these problems of pollution abatement are rather complex and costly, it will require time to completely solve them. Nevertheless, the Committee feels that a definite and concerted effort is necessary in the direction of solving such problems and is asking the cooperation of all municipal and industrial officials toward the advancement and development of proper solutions to the sewage and industrial waste disposal problems within the basin. I'm sure that working together with the Committee, the officials of industry and municipalities can solve their problems satisfactorily within a reasonable length of time. I don't think any member of the Committee is of the opinion that we can correct pollution problems within a short period of time. Each treatment plant will require study, financing, and construction and operation if the job is to be done properly. The important thing is that we get on with the work and pursue it to a satisfactory conclusion.

We have with us Mr. Truman H. Safford who is the Southern Representative for Chas. T. Main, Incorporated, Charlotte, North Carolina. Mr. Safford.

Mr. Truman H. Safford, Southern Representative, Chas. T. Main, Inc., Charlotte, N. C.: I have no comments.

Mr. Hubbard: Thank you for being present. We also have with us Mr. Tom MacCaulty, reporter for the Durham Morning Herald, who is covering this meeting. I would like to recognize Mr. MacCaulty, and if he has some comments, we'd be glad to hear them.

Mr. Tom MacCaulty, Reporter, Durham Morning Herald, Durham, N. C.: No comments.

Mr. Hubbard: Perhaps you want to reserve yours for the Durham Herald. The next person whom I am pleased to introduce is Mr. Walter W. Harper, a Development Engineer with the North Carolina Department of Conservation and Development in Raleigh. Mr. Harper has been vastly interested in our program, particularly as it relates to the program that is developed through his department, that of encouraging the industrial development of the State. Mr. Harper, do you have any comments to offer?

Mr. Walter W. Harper, Development Engineer, N. C. Department of Conservation and Development, Raleigh, N. C.: No comments, thank you.

Mr. Hubbard: We are glad to have you with us. We have with us Mr. John H. Warren, who lists himself as being a farmer at the address of Prospect Hill, North Carolina, and interested in Caswell County as a whole. Mr. Warren.

Gen. Whitfield: He has gone.

Mr. Hubbard: Mr. Thomas H. Whitley, Superintendent of the Caswell County Schools, is present this morning. I hope that he has not had to leave the meeting and if not, I'd like to recognize Mr. Whitley and give him an opportunity to offer any comments he would like to make. Mr. Whitley.

(Mr. Whitley had left the meeting.)

Mr. Hubbard: Next, I am pleased to introduce Mr. J. S. Ameen, District Engineer with the State Board of Health. Mr. Ameen.

Mr. J. S. Ameen, District Sanitary Engineer, State Board of Health, High Point, N. C.: I have no comments.

Mr. Hubbard: From the Town of Draper, we have Mr. W. J. Squires, who is Mayor. Mr. Squires, would you like to make a statement?

Mr. W. J. Squires, Mayor, Town of Draper, Draper, N. C.: I have no comments.

Mr. Hubbard: Thank you for being present. We also have a member of the Council from Draper, Mrs. Virginia Tiller. Mrs. Tiller.

Mrs. Virginia Tiller, Council, Town of Draper, Draper, N. C.: I am glad to be here. I think it's a wonderful project.

Mr. Hubbard: Thank you Mrs. Tiller. We also have with us Mr. H. E. Williams of the Engineering Department of Fieldcrest Mills, Inc., of Spray. Mr. Williams, I would like to recognize you and give you an opportunity of speaking.

Mr. H. E. Williams, Engineering Department, Fieldcrest Mills, Inc., Spray, N. C.: No comments.

Mr. Hubbard: Now from the County Health Department in Chapel Hill, we have Mr. H. Dobson, Jr., Senior Sanitarian. Mr. Dobson.

Mr. H. Dobson, Jr., Senior Sanitarian, Health Department, Chapel Hill, N. C.: No comments.

Mr. Hubbard: Thank you for being present. I would now like to introduce Mr. William E. Edens, Director of Public Works with the City of Reidsville, Mr. Edens.

Mr. William E. Edens, Director of Public Works, City of Reidsville, N. C.: Thank you, Mr. Hubbard. I have no comments.

Mr. Hubbard: We're glad to have you with us, Mr. Edens. And last, we have with us Mr. Raymond Y. Allen who is representing the North Carolina Wildlife Resources Commission as Wildlife Protector, located in Leasburg. We're glad to have you with us. Do you have a statement you would like to make?

Mr. Raymond Y. Allen, N. C. Wildlife Protector, Leasburg, N. C.: No sir.

Mr. Hubbard: That concludes the introduction of people who completed forms, but we have one other person that I would like to recognize - Mr. Morrison of the Greensboro Daily Paper. Mr. Morrison, would you like to make a statement or would you prefer to reserve yours until tomorrow morning? We are glad to have both of you gentlemen from the papers with us and we appreciate your interest in coming over and covering the meeting. Is there anyone else that I have failed to recognize who would like to make any comments concerning the meeting? Mr. Davis, you are pointing towards someone. Would you introduce those gentlemen?

Mr. Davis: (He introduces three gentlemen) John J. Reilly, H. J. Kerner, J. E. Conrad, of Collins and Aikman Corporation.

Mr. Hubbard: We are certainly glad to have you gentlemen with us and if you have any advice that you would like to give the Committee, we would be glad to hear from you. Is there anyone else? If not, I will turn the meeting back to the Chairman for any comment that he would like to make.

Senator Whitfield: Thus far you have been hearing mostly from Mr. Hubbard, Mr. Long, and myself. I would now like to introduce for any comments she may make, our lovely and distinguished Vice-Chairman, Mrs. Bishopric. Mrs. Bishopric.

Mrs. Karl Bishopric, Vice-Chairman, State Stream Sanitation Committee, Spray, N. C.: Thank you, Mr. Whitfield. I have no comment to make except something which I thought of when you were talking about the dry Southwest, which we know our President is now visiting. In that same Greensboro Daily news which I read even if I leave home at 7 o'clock in the morning, there is a very hopeful editorial which quotes a man whom all of us in North Carolina should know more about, and hold as an ideal for our own attitude toward conservation - that man is Hugh Bennett, a North Carolinian and probably the most widely known North Carolinian in the world, because of what he has done around the world to re-claim wasting renewable resources. That editorial said that Hugh Bennett, who now lives in Falls Church, Virginia, in a letter to the Washington Post expressed his faith that the battle against drought in the southwest could be won. He recalled the methods used to reclaim land once so afflicted that ravens of the plain had to build nests from bits of wire picked up from farmsteads in the total absence of vegetable materials for nest construction. Every crop was contoured; cattle were not permitted to overgraze; wheatland was planted in wheat, grassland in grass; wild sunflowers were planted in the scorched areas. "It was", he wrote, "probably the world's greatest contour movement." And it was successful. Let's all of us become conservation conscious. Let's know more about what Hugh Bennett has done around the world; let's read Louis Bromfield's books - I heard him say once that the tree planting and contour ploughing and other conservation measures undertaken on his farm at Malabar had increased the flow of natural springs from 50 to 200 percent; that springs which had been dry for a generation were flowing again; and yields of farm crops had increased as much as 1500 per cent! William Voght, another dedicated conservationist, telling how we could prepare the soil and plant it so that we could multiply its ability to produce and retain moisture, said that much farm land "is probably not capturing a fifth of the water it could, if it were in good shape ... meantime millions of dollars are being spent on boondoggle dams to catch water and topsoil that ought to be held in place by the grasses and forests.."

When we look on burned over forests, let's do something about fire prevention and reforestation; when we see eroded fields, let's try to do something about soil conservation. And when we think of polluted waters, let's remember that every one of us has a responsibility to do something about them. Water can renew itself - a magic quality - if it has far enough to flow before others need it. Now we live so close together we cannot count on that any longer. We need so much water for our modern conveniences; for our utilities; for our industries. And North Carolina wants more industries and all of them want clean water..We cannot get more water except by long years of the right conservation practices, and by cleaning up our streams and rivers so that the flow we now have can be used over and over again.

To the two women who are here, and for the wives of the men who may be asking you to buy one of those new disposal sinks, let me add that I heard William Voght say once that the people who invented them ought to be put in jail, and all those who use them ought to be heavily fined; that waste matter from our kitchens and gardens ought to be turned into compost for our soil and NOT BE RUN THROUGH OUR KITCHEN SINKS TO CHOKE UP OUR STREAMS AND OUR RIVERS!

Senator Whitfield: Thank you Mrs. Bishopric. Mrs. Bishopric has made a very fine statement which we all must remember. She's talking about using water. Our big problem is to keep water useable. That's what we are here for, to keep water useable, useable for the proper industry, for more industries, for agriculture, and for all other purposes. When water ceases to be useable, it ceases to be of value. We have here the Mayor of Goldsboro who represents municipalities on our Committee. Mayor Scott Berkeley.

Mayor Scott B. Berkeley, Member, State Stream Sanitation Committee, Goldsboro, N. C.: Mr. Chairman, ladies and gentlemen of the Committee, and you splendid citizens of the great State of North Carolina, and you good folks who have found that North Carolina is a good place to come to build homes and make a living, I want to say briefly what I have said on former occasions such as this. In the seven years that I have had the pleasure and high privilege of serving on the State Stream Sanitation Committee, a part of which was by taking the hand of my good friend Grady Farthing here and this old war horse here, and undertaking to have legislation that would do what we felt North Carolinians and those who wanted to be North Carolinians, and certainly good Americans wanted to be done in this situation of our critical water problem. I think I'll just conclude by recalling to mind what we used to see on desks around the old Army Air Force during World War II. We had these little desk mottos and one of them said this, "The difficult things we do immediately, the impossible takes a little longer." It seems to me that that is just what our forefathers have said when they superimposed upon the great seal of the State of North Carolina "Esse Quam Videri" - "To be rather than to seem" That's the picture here as I see it.

Senator Whitfield: Thank you Mayor Berkeley. Mr. Vann from Ahoskie represents municipalities. We will be glad to hear from you, Mr. Vann.

Mr. J. N. Vann, Member, State Stream Sanitation Committee, Ahoskie, N. C.: Mr. Chairman, I don't think anyone wants to hear from me. I come from the extreme eastern part of the State, as you all know, and we have no water problems down there. We have plenty of water; if you don't believe me, come to see us. We don't have altogether the class of water that we would like to have.

Our trouble, in part, is that you people living in the mountains have, through your increased industry, overpopulated certain areas and are dumping your human leavings on us and we have to take it as it comes down the stream whether it is good or bad.

This has been, to my thinking, a delightful meeting because you all seem to have a fair idea that you should prudently and properly do something for me and my neighbors. Recently, a Congressman was elected in my community and he decided before he went to Washington that he would go to his family physician and have a physical check-up. The doctor first asked him if he smoked. He said, "Yes, I smoke right much." He said, "Well don't smoke quite so much, that's not so good for you. How about your eating habits?" He said, "I haven't got a rabbit's appetite, I eat lots doctor." He said, "Well cut down on your eating, that's not good for you, eat less. How about your drinking habits," inquired the doctor. The Congressman lied to him a little bit there. He said, "Oh, I never touch a drop." The doctor said, "You know a little whiskey is good for you now and then." I think that if we get the active cooperation of the people in the West and Central Piedmont, it will be mighty good for us people down East.

Senator Whitfield: We have our youngest member of the Committee. He's been with us about six months and he's gotten right into harness and is making a whale of a member. We would like to hear from the gentleman from Lincolnton, Mr. Walter Clark.

Mr. Walter Clark, Member, State Stream Sanitation Committee, Lincolnton, N. C.: Mr. Chairman, being the freshman member of the Committee, I think possibly I'd better do a little more listening and learning before I do any talking. I do want to say, however, that I have enjoyed meeting all of you nice people and that your comments have been most helpful to me. Thank you.

Senator Whitfield: Mr. Farthing from Boone represents our wildlife interests. He's been on the Committee quite a while. We'll be glad to hear from Mr. Grady Farthing.

Mr. Grady Farthing, Member, State Stream Sanitation Committee, Boone, N. C.: Mr. Chairman, I didn't have in mind saying anything. I notice that we have two game wardens present. I used to visit this section years ago as a game commissioner. There were some of our neighbors over there who disobeyed our law. Our good friend, Swicegood took it upon himself to go over there and bring them back. I don't know whether he could do that today or not, but of all of our meetings, Mr. Chairman, I think that this is one of the finest and most representative groups that we've ever had and I do hope that we can be of some help in assisting them to meet their water requirements, whatever they may be. I'm glad to be here.

Senator Whitfield: Thank you Mr. Farthing. Colonel Snow from the Water Resources Division of the Department of Conservation and Development is also on our Committee.

Mr. B. C. Snow, Member, State Stream Sanitation Committee, Raleigh, N. C.: Mr. Chairman, members of the Committee, ladies and gentlemen, I'm the next youngest, at least from the standpoint of service on this Committee. It's been a great pleasure and privilege to me during these past 2½ years to be an ex officio, non-voting member of this Committee. I think they are doing

a fine job. I think they are very fair minded, and they have a very important job to do. I think that my service on this Committee is one of the most important duties that I have as head of the Division of Water Resources of the Department of Conservation and Development. I'm glad to be here today.

Senator Whitfield: Thank you, Colonel. This brings us to the close of our hearing here. It's been pleasant and delightful to be with you. By the way, there's a young lady back there who has just arrived. We'd be happy to hear from her. The ladies always speak for the men anyhow. (The lady present was Mrs. Harrington who stated that she did not have anything to say.) Mr. Harrington, would you care to say something for us?

Mr. Tom Harrington of the Attorney General's Office, Raleigh, N. C.: Chairman Whitfield, I came here unprepared to make any comments, so I am just observing.

Senator Whitfield: We've been very happy to be here. We are glad that we selected Yanceyville for our hearing. We are going to Halifax for our hearing tomorrow. In conclusion, please remember that this is your Committee, and that the duty of all of us is to keep water useable. Mayor Berkeley spoke of a motto. I want to remind you of a motto, but I'm going to change that motto a little bit. Remember we've heard that duty is the sublimest word in the English language. I don't take away from anyone their ideal of duty. It's a great word, but down through the years, particularly during my five terms in the Legislature, I learned another word that's very important. In my opinion, it is just as important as the word "duty", and that's "courage". I've seen so few people who had courage when the chips are down. So, to me, the word "courage" is the greatest word in the English language. Do we have the courage to take a stand? Do we have the courage of our convictions? Mr. Satterfield and Mr. Gardner know how disappointed we are sometimes in the legislature when we see some of our friends who lack courage to take a stand and fight the battle. They want to be popular. It quite often isn't popular to fight for the causes that must be fought for, particularly where money is involved.

Now let's remember, keep water useable. Remember that no civilization has ever fallen because it didn't have a paved road, necessary as they are. Many civilizations have fallen from the lack of water or because of polluted water. Let's you and I and all North Carolinians dedicate ourselves to the task of cleaning up our streams, of helping industry do the right things and helping them to help us do the right things. To do that let's dedicate ourselves to courage. Thank you. This hearing is now adjourned.

(The meeting adjourned at 12:25 p.m.)

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The following letters, briefs and affidavits were received by the Executive Secretary concerning the public hearing held at Yanceyville, North Carolina:

COMMONWEALTH OF VIRGINIA

Consultants
E. C. Meredith
Richard Messer
Sidney S. Negus
Richmond
Executive Secretary
A. H. Paessler
Richmond

State Water Control Board
415 West Franklin Street
Richmond 20
Telephone: 7-2681

Board Members
T. Brady Saunders
Richmond
Thomas M. Thornhill
Lynchburg
Ross H. Walker
Richmond
R. A. West
Covington
E. Blackburn Moore
Berryville
Chairman

December 17, 1956

Mr. E. C. Hubbard, Executive Secy.
State Stream Sanitation Committee
State Board of Health
Raleigh, North Carolina

Dear Mr. Hubbard:

This will acknowledge your legal notices concerning public hearings to be held on January 15-16, 1957, concerning classifications of the water in the Roanoke River Basin. This is to advise that Mr. Paessler will be tied up in a board meeting on both the 15th and the 16th and will not be able to attend the hearings. No doubt questions will arise as to Virginia's contribution to pollution of the Dan and Smith Rivers. Therefore, we are sending you up-to-date information concerning the three major sources of pollution in the Dan and Smith Rivers.

In looking over the proposed classification for the water of the Roanoke River Basin, it appears that the water coming from Virginia is within the classifications proposed with the exception of the Smith River above Leaksville and Spray, North Carolina, and the Dan River below Danville, Virginia. The City of Martinsville is the main contributor to pollution in the Smith River. You will find enclosed a copy of Minute 36 from the Board's proceedings on November 27-28, 1956, which summarizes Martinsville's status to date.

The main contributors to pollution in the Dan River below Danville are the City of Danville and the Dan River Mills. Enclosed you will find a copy of Minute 26 from the Board's proceedings on November 27-28, 1956, and a portion of a letter from the City Manager of the City of Danville, setting forth the proposed plan as referred to in the last paragraph of Minute 26.

In reference to the Dan River Mills, you will find enclosed a copy of the file survey of the owner's pollution abatement progress as digested by our Mr. T. M. Beamon. You will note under item 3 in the recommendations that the owner have representatives present at the next meeting of the Board to discuss with the Board its work in reference to pollution abatement. However, the agenda at the Board's meeting on January 15-16, 1957, will be dealing almost entirely with the consideration of applications for construction grants in accordance with Public Law 660, 84th Congress. Therefore, the hearing will probably not be held until sometime in March, 1957.

If you desire any additional information other than what we have enclosed, please do not hesitate to contact us.

Very truly yours,

/s/ R. V. Davis

R. V. Davis, Engineer

RVD/bt

enclosures

December 12, 1956

Mr. Julian F. Hirst
City Manager
Martinsville, Virginia

Dear Mr. Hirst:

Set forth below is a tentative draft of Minute 36 from the proceedings of the Board at its meeting on November 27-28, 1956. If you have any comments or changes, please advise us without delay so the final draft can be formulated and submitted to the Board for approval.

Minute 36 - City of Martinsville

Reports dated July 21 and November 21, 1956, were received from the City of Martinsville in accordance with the ruling as contained in Minute 11 from the proceedings of the Board at its meeting on May 10-11, 1956. These showed that the preliminary plans being prepared by the owner's consulting engineers would be completed and submitted to the City on December 1, 1956, and that the City is requesting an extention of a planning grant (under which these plans are being prepared) which was due to expire on November 29, 1956.

The Board received the report and directed that the City of Martinsville submit another report on or before January 10, 1957, in time for consideration at the Board's next meeting on January 15-16, 1957.

Yours very truly,

Executive Secretary

AHP/bd

December 11, 1956

Mr. H. D. Bowling
Director of Public Works
City of Danville
Danville, Virginia

Dear Mr. Bowling:

Set forth below is a tentative draft of Minute 26 from the proceedings of the Board at its meeting on November 27-28, 1956. If you have any comments or changes, please advise us without delay so the final draft can be formulated and submitted to the Board for approval.

Minute 26 - City of Danville

As recorded in Minute 6 of the Board's meeting on May 26-27, 1955, representatives from the City of Danville appeared to present a plan and schedule for construction of sewer lines and a treatment plant. On November 9, 1956, Mr. Davis wrote the City for an up-to-date progress report. The City's letter of November 20, 1956, with attachments, set forth reasons why the original schedule could not be adhered to and presented two alternate plans and schedules for carrying out the City's sewerage improvement project.

The Board ruled that it was disappointed because of the City's inability to adhere to its original schedule and that it was willing to accept the first of the two alternatives as set forth in the City's letter of November 20, 1956, and attachments.

Yours very truly,

Executive Secretary,

AHP/bd
cc: Division of Engineering, SDH

MEMORANDUM

STATE WATER CONTROL BOARD

415 West Franklin Street Richmond 20, Va.

SUBJECT: Dan River Mills, Inc. - File Survey of Pollution Abatement Progress
TO: File
FROM: T. M. Beamon
DATE: October 27, 1956
COPIES: Owner

In 1949 the owner commenced his pollution abatement program, following certificate issuance in 1948, by installing caustic recovery equipment at the Schoolfield plant to recover in excess of 75% of the then discharged caustic soda. An industrial waste survey conducted by the owner in December 1949

showed approximately 7.8 million gallons per day of waste containing 30,500 pounds per day B. O. D. from the Schoolfield plant.

Pilot plant studies on chemical coagulation and precipitation of this effluent conducted during 1951 through 1953 showed both prohibitive costs for this type treatment and very little B. O. D. reduction. In 1954 studies were instigated to substitute a synthetic sizing material with low 5-day B. O. D. for the natural starch used. To date, no startling results have been reported as to its feasibility of operation or as to a sizable B. O. D. reduction resulting from its use.

The owner in 1955 reported a B. O. D. reduction of the 1950 waste load at the Schoolfield plant of 38%; however, a recent survey this past summer shows the reduction to be only 15-16% of the 1950 load. The owner stated that the reduction was due to reduction of caustic and other chemical usage and to partial substitution of synthetic sizing for the normal starch sizing.

The data show only a small reduction in B. O. D. load to the Dan River since certification in 1948, despite the fact that considerable work has been done along research lines.

It is recommended that Dan River Mills, Inc.:

1. Summarize its results, conclusions, and possible future investigations on the sizing substitute program.

2. Begin work on Scheme C, Biological Filtration, of the Industrial Waste Treatment Studies reported in its March 23, 1954, letter.

3. Have representatives present at the next possible Board meeting to discuss with it the work that has been done and the work planned towards reduction of industrial wastes discharged to State waters.

Plans and specifications for this project have now been completed and presented to the State Water Control Board. They have been approved by both the Water Control Board and the State Health Department.

In view therefore, of our inability to follow the schedule outlined in our May 26, 1955 report we should now like to request a re-scheduling of the project.

It now appears that the following amount will be available for construction by December 31, 1956:

1. Sewer tax	$150,000.00
2. Allocation of Council bonds	200,000.00
	$350,000.00

Council has agreed to allocate an additional $200,000.00 from Council Bonds in 1957. Anticipated revenues from sewer tax in 1957 is $160,000.00 or a total of $360,000.00 during 1957. Total revenues from these sources will amount to approximately $710,000.00 for the two years, 1956 and 1957.

In addition to these funds, the Council made available $46,000.00 in 1955, (from current revenues) for plans and specifications. This money, of course, has been paid to Hayes, Seay, Mattern and Mattern for services

in connection with development of plans and specifications. Also in 1955 the City of Danville purchased a site suitable in size for the construction of a plant for both primary and secondary treatment. This site consists of approximately seventeen (17) acres of land. Funds were appropriated from current revenues in the amount of $5,000.00 for the purchase of this site.

Total revenues received and anticipated from 1955 to 1957 amounts to $761,000.00 as follows:

1955 - Current revenues	$ 51,000.00
1956 - Sewer Tax and Council bonds	$350,000.00
1957 - Sewer Tax and Council bonds	$360,000.00
	$761,000.00

The City plans to make application for Federal funds under Public Law #660 in the amount of $250,000.00. Assuming that the City of Danville qualifies for this amount in 1957, there would be available total construction funds from all sources by December 31, 1957 - $960,000.00.

The City wishes to present the following plans for the Board's consideration:

In view of the circumstances herein stated it now appears that the City will not be in position to advertise for bids for the construction of the Sewage Disposal Plant and the first phase of the interceptor system before late summer of 1957. In re-scheduling this project, we believe that it will be possible to have it under construction either in September or October of 1957, and possibly ready for operation in the early part of 1959. This, of course, will involve only the treatment of waste that is received into the interceptor system constructed in the first phase of the project.

We believe that sufficient funds from the sources mentioned, assuming that Federal funds are available in the amount of $250,000.00 would permit completion of this phase and operation by early 1959. The City would be unable to begin construction of the second phase prior to January 1, 1959, but at that time would undertake this part of the program and continue the construction with a maximum expenditure of $350,000.00 per year until the entire program is completed.

Assuming that costs remain about the same, this program as outlined above would mean a delay of about twelve to eighteen months from the original plan submitted to the State Water Control Board on May 26, 1955.

In the event the Board cannot accept the plan outlined above, the City offers as a second plan the following:

The construction of interceptor system beginning the middle of 1957 and continuing the construction in the amount of $350,000.00 per year until the three phases of the interceptor system have been completed. In the event Federal funds in the amount of $250,000.00 are available it, of course, would speed construction of the interceptor system. The City would then propose to build the treatment plant as soon thereafter as funds are available from the sewer tax and allocation of Council bonds.

We shall appreciate the Board's consideration of either of the two suggested plans outlined herein.

Yours very truly,

/s/T. Edward Temple

T. Edward Temple
City Manager

TET:mlm

Attachments

December 28, 1956

Mr. A. H. Paessler, Executive Secretary
State Water Control Board
415 West Franklin Street
Richmond 20, Virginia

Dear Mr. Paessler:

This will acknowledge and thank you for Mr. J. V. Davis' nice letter of December 17, 1956, together with enclosures relating to the status of sources of pollution tributary to waters of the Roanoke River Basin in Virginia. The information furnished will be of considerable help to us in connection with the stream classification hearing scheduled in the basin on January 15 and 16, 1957.

In connection with the above mentioned hearings, I regret that they conflict with a meeting of your Board which will prevent you attending one or both of the hearings. We would, of course, be very happy to have you present, but since it will be impossible for you to attend, I am wondering if Mr. Davis or some other member of your staff can arrange to attend. If so, his presence and any comments he might like to make would be appreciated.

Mr. Davis' letter brings us pretty well up-to-date with regard to the status of the pollution abatement efforts being made by the City of Martinsville, the City of Danville, and Dan River Mills, Inc.; however, he did not comment upon the proposed classifications for the waters entering Virginia from North Carolina. We, of course, are cognizant of the importance of providing water of acceptable quality to meet the present uses being made of such waters in your State. We have, accordingly, tried to propose classifications for those streams which cross the State line that will reasonably protect your State's interests. We would like to know if you concur in the proposed classifications and, if not, what changes you would suggest.

I regret that you cannot be present at our hearings but certainly understand the circumstances which prevent your attendance.

Sincerely yours,

/s/ E. C. Hubbard

E. C. Hubbard
Executive Secretary

COMMONWEALTH OF VIRGINIA

Consultants
E. C. Meredith
Richard Messer
Sidney S. Negus
Richmond
Executive Secretary
A. H. Paessler
Richmond

State Water Control Board
415 West Franklin Street
Richmond 20
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Board Members
T. Brady Saunders
Richmond
Thomas M. Thornhill
Lynchburg
Ross H. Walker
Richmond
R. A. West
Covington
E. Blackburn Moore
Berryville
Chairman

January 3, 1957

Mr. E. C. Hubbard, Executive Secretary
State Stream Sanitation Committee
North Carolina State Board of Health
Raleigh, North Carolina

Dear Mr. Hubbard:

This will acknowledge your letter of December 28 concerning the hearings on January 15 and 16 on the Roanoke River basin classifications.

We are sorry that all members of our regular staff; that is, Messrs. Davis, Otis, and I, will be tied up with the Water Control Board meeting on those two dates and we will not be able to attend your hearings. However, we are requesting Mr. Daniel F. Aderholt, our chemist, to attend your hearings as an observer and it may be that he will have a few words to say. Otherwise, the information that Bod Davis has already sent you concerning pollution abatement in the Roanoke River basin in Virginia should suffice for your purposes at the hearings.

The staff here joins me in wishing you and your staff the best of everything for 1957.

Sincerely yours,

/s/ Al

Executive Secretary

AHP*bd

STATE OF NORTH CAROLINA

Wildlife Resources Commission

RALEIGH, N. C.

H. C. Kennett, Durham
Chairman
G. E. Beal, Red Oak
Thurman Briggs, Lexington
Robert M. Carr, Wallace
James A. Connelly, Morganton

Clyde P. Patton, Raleigh
Executive Director
R. F. Crouse, Sparta
E. D. McGougan, Lumber Bridge
C. T. Wilson, Biltmore
O. L. Woodhouse, Grandy

January 28, 1957

Mr. E. C. Hubbard, Executive Secretary
N. C. State Stream Sanitation Committee
State Board of Health Building
Raleigh, North Carolina

Dear Mr. Hubbard:

This is in reference to the public hearing which the State Stream Sanitation Committee held recently concerning the classification of the upper part of the Dan River. Since the proposed classification of the Dan was of at least an adequate quality to support fish life, and since it provides water supplies for Madison and Leaksville, our representative made no comment at the time of the hearing.

It has since occurred to us that you may not know that the Dan River, from the point where it enters North Carolina from Virginia down to its confluence with Big Creek, constitutes suitable habitat for mountain trout. We are calling this to your attention because of the different oxygen requirements in the trout waters of the State.

The Wildlife Resources Commission annually stocks the northmost section of the Dan River, and some of its tributaries, with trout from the State hatcheries. In addition to the hatchery fish, there is an existing native population of trout in that section of the river. Also, may we point out that trout normally move up tributaries into very small spring branches to spawn. Consequently, the Wildlife Resources Commission wishes to recommend that the Dan River, together with all of its tributaries, be classified as mountain trout waters from the Virginia line down to and including the confluence of Big Creek. Our intent is to include Big Creek and its tributaries in the recommended trout waters.

The Dan River below Big Creek is an important smallmouth bass stream, and the proposed classification for that section is believed to be adequate to provide for their preservation. Our Commission will very much appreciate any consideration that the State Stream Sanitation Committee can give to this recommendation.

Very truly yours,

/s/ J. H. Cornell (G.B.)

J. H. Cornell
Chief, Fish Division

JHC:gb

Henry T. Powell, Mayor W. G. Royster, City Clerk
J. H. Zollicoffer, City Attorney

CITY OF HENDERSON

Vance County

Henderson, North Carolina

February 5, 1957

Mr. E. C. Hubbard, Executive Secretary,
State Stream Sanitation Committee,
P. O. Box 2091,
Raleigh, N. C.

Dear Mr. Hubbard:

As I wrote you I had intended to be at the meeting of your committee when the public hearing was held in Roanoke Rapids but I had the misfortune to fall on the ice in Raleigh the day before and was not able to get there and it was too late to make other arrangements.

I do feel that we should advise your committee of two facts. The first is that when the samples were taken in 1953 which showed that a very high bacterial count there were certain conditions then existing which have been remedied. In 1954 we dynamited 2700 feet of channel for the creek, which enabled the creek to flow freely and drained a very swampy area. Also at that time the sewage treatment plant was not operating as it should. At the recommendation of your Mr. Stevenson we spent several thousand dollars and the plant is now in A-1 condition. And I am sure that the count would be much lower if taken next summer.

The second thing is that our long range plans calls for us to eventually go to Island Creek after it joins Little Island Creek for our water supply. This should be twenty to twenty five years in the future but it is in the long range plans prepared by Mr. W. C. Olsen for us five or six years ago. Our present supply will be adequate, we think, for a City of 25,000 to 30,000.

Regretting our inability to attend the meeting but assuring you that we have read the report with care, I remain,

Very truly yours,

/s/ Henry T. Powell

Mayor.

February 6, 1957

Mr. Henry T. Powell, Mayor
City of Henderson
Henderson, North Carolina

Dear Mr. Powell:

This will acknowledge and thank you for your letter of February 5, 1957, concerning the public hearing held in Halifax, at which information relating to proposed classifications for the waters of the Roanoke River Basin was presented.

I am indeed sorry to learn of your misfortune and I certainly hope that the fall did not cause you any serious injury. It is also regretted that it resulted in your being unable to attend the above mentioned public hearing. I sincerely hope that you have fully recovered from any ill effects which you may have received from the fall.

The information you have given me concerning plans for a future water supply as well as improvements which have been made at your sewage treatment plant will be quite helpful to the committee in considering the classifications to be assigned to the waters in your area. I note from your statement that your plans for obtaining adequate future water supply will involve constructing intake works on Island Creek below the mouth of Little Island Creek and that this development will possibly be from twenty to twenty-five years in the future. In view of the fact that you will not develop Little Island Creek as a source of water supply within the next twenty to twenty-five years and since the committee is authorized by the Statute to reclassify the streams when new uses justify such reclassification, is it your opinion, or rather your request, that the committee place Little Island Creek in the water supply classification (Class A-II) at this time? If so, I should like to have a future statement concerning this matter.

Your letter of February 5, 1957, will be included in the report of the public hearing, likewise, we will be glad to include any additional statements which you wish to offer concerning Little Island Creek providing they are submitted prior to February 15, 1957, which will be within the thirty day period following the public hearing established by the Statute.

With best personal regards and hoping to hear from you in the near future, I am

Sincerely yours,

/s/ E. C. Hubbard

E. C. Hubbard
Executive Secretary

Henry T. Powell, Mayor W. G. Royster, City Clerk
J. H. Zollicoffer, City Attorney

CITY OF HENDERSON
Vance County
Henderson, North Carolina
February 7, 1957

Mr. E. C. Hubbard, Executive Secretary,
State Stream Sanitation Committee,
P. O. Box 2091,
Raleigh, N. C.

Dear Mr. Hubbard:

I thank you for your letter of February 6th acknowledging our letter to the committee and asking if we desired to request that Big Island Creek now be designated as in the water supply classification at this time. We did not desire to ask for any change in the classification now. We simply desired to let the committee know that we did have long range plans which would involve this creek, and place us in the position should a question arise over the uses of Big Island Creek that we had filed notice of these future intentions when the public hearing was held. We simply felt that we would be in a much better position to ask for a change at a later date if we did not sleep on our rights at this time.

I am now fully recovered from the fall on the ice which resulted in a badly wrenched back.

Thanking you for your courtesy in this matter, I remain,

Sincerely yours,

/s/ Henry T. Powell

Mayor

February 11, 1957

Honorable J. Vivian Whitfield, Chairman
North Carolina Stream Sanitation Committee
Raleigh, North Carolina

Dear Mr. Whitfield:

I enjoyed seeing you and the other members of the Committee at the hearing in Yanceyville last month. I want to be certain that you understand the situation with regard to Marlowe's Creek as we view it.

The stream originates in Roxboro and flows Northerly past Roxboro's two major mill villages, Longhurst and Cavel, into Hyco. Roxboro's sewer

line empties into the creek at a point just North of Cavel. Between this point and the point of the confluence of Marlowe's Creek with Hyco there are only fifteen landowners. We have talked with a number of these landowners and we have found none who did not indicate a willingness to negotiate with the City for its continued pollution of the creek. That being true, it appears to us that the only person affected adversely by the City's continued use of Marlowe's under present circumstances would be landowners along Hyco, and, therefore, it appears to us it becomes most pertinent to know to what extent Marlowe's is purified by the time it enters Hyco. It was my understanding from Mr. W. E. Long, Jr. that the purification of Marlowe's was fairly rapid after the initial pollution. With that in mind, we requested that a test be made at the confluence of Marlowe's with Hyco and as far as we have as yet been able to discover no such test has yet been made.

We are now at the critical point in negotiations with the large industry which is considering the location of a new plant in Roxboro. This plant will mean gainful employment for 250 to 300 Person County people with a consequent increase in the standards of living for the families of those people. It seems to us that when the possibility of such a major economic gain to the county is weighed against the aesthetic beauty of clearing the waters of a creek the owners of whose banks have indicated no particular desire that they be cleared, there is only one obvious answer, if downstream owners on Hyco are not adversely affected.

Roxboro is a progressive small town. It has made very major improvements in its water supply and filter system in the last few years, as well as developing water and sewer facilities for its residents. The idea of long continued maintenance of an open sewer such as Marlowe's actually is is as distasteful to us as it is to you, and it is the expressed intention of the City Board to remedy the situation by the construction of a sewage treatment plant as soon as city finances will permit. In the meantime, we feel that the deferral of classification for a given period of years (conditioned on the City having the written permission of the Marlowe's landowners), or the specific granting of a number of years to meet a given classification, would be a very powerful lever in our favor in locating this major source of employment for our people.

I am authorized by the Water Commissioners of the City of Roxboro to say that they fully concur in the opinions above expressed.

We hope that you will give our problem very early and favorable consideration.

Yours very truly,

/s/ Richard G. Long

RGL/hfl

Richard G. Long

cc: Honorable B. I. Satterfield
Timberlake, N. C.

Mr. W. E. Long, Jr., Chief
Pollution Control Section
State Stream Sanitation Committee
Raleigh, N. C.

Mr. W. F. Timberlake
City Manager
Roxboro, N. C.

Mr. B. L. Branson, Jr.
Development Engineer
N. C. Dept. of Conservation & Development
Raleigh, N. C.

February 14, 1957

Mr. Richard G. Long
Burns and Long
Attorneys at Law
Roxboro, North Carolina

Subject: Marlowe Creek
Roxboro, North Carolina

Dear Mr. Long:

Reference is made to your letter of February 11, 1957, to Honorable J. Vivian Whitfield, Chairman, State Stream Sanitation Committee, concerning the above subject stream. We appreciate your courtesy in forwarding a copy of your letter to this office.

Please be assured that we appreciate your interest in the classification of Marlowe Creek. Certainly, it is the desire of the State Stream Sanitation Committee to classify all of our waters in such manner as to protect the public interest. We are, therefore, glad to have your further views relative to the matter.

Regarding the attitude of the owners of properties along Marlowe Creek, we have recently received statements from two individuals, who represent themselves as owning considerable property along the creek, registering strong opposition to the proposal to classify the stream below that required for agricultural usage. Should these and other land owners along Marlowe Creek indicate their willingness to negotiate with the city and industries in the area for the continued pollution of the creek, the Committee would be in a much better position to consider classifying the stream as Class "E". It is suggested, therefore, that it might be desirable for those interested in the lower classification to obtain and submit statements from the property owners concerning their wishes in the matter.

In connection with your request that tests be made near the mouth of Marlowe Creek to determine the effects of the pollution in Marlowe Creek upon Hyco Creek, we must advise that a study of this nature must be conducted during periods when low flows and high water temperatures prevail in order to accurately evaluate the rate of purification in the creek. Such stream conditions have not prevailed since your request; however, the study will be made as soon as possible during the coming summer.

In conclusion, I wish to assure you that the Committee will appreciate any additional information you may furnish regarding the attitude of the property owners along the stream in question or any other pertinent information you wish to submit.

Sincerely yours,

/s/ E. C. Hubbard

E. C. Hubbard
Executive Secretary

Cc: J. V. Whitfield, Chairman

COOPER A. HALL
Attorney and Counselor at Law
601-3 Security National Bank Building
Burlington, N. C.

February 13, 1957

Mr. E. C. Hubbard
Executive Secretary
N. C. State Board of Health
Raleigh, North Carolina

Dear Sir:

Mrs. B. E. Mitchell, Woodsdale, N. C., my sister, has just brought to my attention the fact that a move is on foot to increase the polution of Marlowe Creek and, also, that interested parties are invited and have an opportunity to file a brief in connection with this matter up to and including the 15th day of this month. I assume that the objections that I might offer in this letter would take the place of a formal brief.

Mrs. Mitchell owns a valuable farm adjoining Marlowe Creek at or near where it empties into Hyco River. At this time the water from the creek is not especially needed or used for cattle. But, she has an only son who is in the army at present and who has been hoping to convert the farm into a cattle farm when he gets home. If so, the polution of the stream would make it impossible for him to do so. And, of course, it would greatly reduce the value of the farm.

Let me add that I am very much interested in seeing industry come to our state and, also, see local communities organize and develop industries. But, there should be some way by which this could be done without destroying the use or value of land adjoining streams.

I hope Roxboro and vicinity can develop without making useless many acres of valuable land, and possibly causing my nephew to move to some other section of the country.

Yours very truly,

/s/C. A. Hall

CAH:R.

LAW OFFICES
BRYANT, LIPTON, STRAYHORN & BRYANT
DURHAM, NORTH CAROLINA

111 Corcoran Street

Victor S. Bryant
Robert I. Lipton
Ralph N. Strayhorn
Victor S. Bryant, Jr.

Telephone 9-2051

February 13, 1957

North Carolina State Stream
Sanitation Committee
Raleigh, North Carolina

Attention Mr. E. C. Hubbard,
Executive Secretary

Dear Mr. Hubbard:

Enclosed herewith please find original and two copies of brief which I wish to file on behalf of Dr. E. M. Robertson and others relating to the classification of Marlowe Creek, which I understand is a part of the Roanoke River Pollution Survey.

Will you please acknowledge receipt of this brief and advise me if the Commission decides to have any further hearings or wishes any further information in regard to this matter.

Thanking you, I am

Respectfully yours,

/s/ Victor S. Bryant

Victor S. Bryant

VSB:MB
Encl.

TO THE NORTH CAROLINA STREAM SANITATION COMMITTEE
RALEIGH, NORTH CAROLINA

IN RE: Classification of Marlowe Creek
Roanoke River Pollution Survey

Brief Filed Opposing Lowering of the Classification of Marlowe Creek and Request for Improvement of Conditions

This brief is filed by and on behalf of the following property owners:

Dr. E. M. Robertson
Robert G. Robertson
Samuel T. Robertson
Claiborne G. Robertson
Crowder B. Robertson

The above named respectfully represent the following facts to the North Carolina Stream Sanitation Committee:

1. Dr. E. M. Robertson owns approximately 630 acres of land with a stream frontage of approximately two and one-quarter miles on one side of Marlowe Creek.

2. Robert G. Robertson owns approximately five hundred acres of land with a creek frontage of approximately three miles on one side of Marlowe Creek.

3. Samuel T. Robertson owns approximately eight hundred acres of land with a stream frontage on one side of Marlowe Creek of approximately three and one-half miles.

4. Claiborne G. Robertson owns approximately three hundred acres of land with a stream frontage on one side of Marlowe Creek of approximately one mile.

5. Crowder B. Robertson owns approximately three hundred acres of land with a stream frontage of one mile on both sides of Marlowe Creek. Marlowe Creek flows from Roxboro by Longhurst and Ca-Vel, and flows Northwardly through the Robertson land. It is approximately four to four and a half miles from Roxboro to where the Robertson land starts, and is approximately three miles from Longhurst and two and a half miles from Ca-Vel to the Robertson land.

6. Marlowe Creek is a small stream except in very wet weather when it overflows. At times it has gone dry, but this has not occurred within the past twenty years. The Collins-Ackerman Company at Ca-Vel and the J. A. Long Mills at Longhurst and the municipality of Roxboro have been flushing dye stuffs, industrial waste and sewage into said creek. Even in ordinary weather the stream is not large enough to accommodate the filth and waste which is put into it, and in dry weather there is not enough water to keep the stream from being a nuisance.

7. According to the last census in 1950, Roxboro had a population of 4,231 within the city limits, Longhurst had a population of 1,587, and Ca-Vel a population of 550. Since 1950 there has been an increase of at least ten per cent in the inhabitants of these three towns within the municipal limits, and of course in addition there are well settled areas of each of the three communities outside of the municipal limits. The combined population of these towns is well in excess of 7,000 at the present time. Neither Roxboro, Longhurst nor Ca-Vel have sewage treatment plants, nor do they have any sewage outlets other than Marlowe Creek.

8. Industrial plants at Longhurst consisting of a large sized textile mill, and the industrial plants at Ca-Vel consisting among others of the Collins-Ackerman plants, have been using Marlowe Creek for dumping their industrial waste and dye stuffs, and neither the towns of Roxboro, Longhurst or Ca-Vel have any other stream than Marlowe Creek for carrying off their untreated sewage and dye stuffs and industrial waste.

9. The result has been that Marlowe Creek has become highly polluted; there are deposits in the creek bed and along the banks of grayish, greenish, bluish slime which destroys the value of the sand for building purposes and which gives off a highly offensive odor. The creek, particularly where trees or branches have fallen into it, has a tendency to dam up the surface of the water on which scum forms, and near these back up cans, bottles, contraceptives, and from them float streamers of filth; that the raw and untreated sewage from Roxboro, Longhurst and Ca-Vel float down the creek, and when there is a freshet and the creek overflows its banks all of this is spread out over the lowland, forming evil smelling pools which constitute breeding places for flies, mosquitos and other insects.

10. No fish are now swimming in the creek, either having been killed or driven away by the chemicals, dye stuffs and other deleterious substances in the water. The water is such that it is not fit for consumption by animals, and the land along the creek bank has to be fenced off. The water is unsuitable for farm irrigation.

11. The undersigned are informed that Roxboro empties an estimate of 420,000 gallons of waste and raw and untreated sewage material into Marlowe Creek daily, and we think this is the equivalent of sewage of an estimated population of 6,250 people. We understand that Ca-Vel discharges from its plant an estimate of 570,000 gallons of dye and waste products daily, which is equivalent to sewage of an estimated population of 4,000. We understand that the W. B. Laws Poultry Dressing Plant empties a total of 15,000 gallons of primary treated sewage or disposal from its poultry dressing plant daily, which is the equivalent of sewage of approximately 390 people.

12. The petitioners who have filed this brief understand that Marlowe Creek either has been or is proposed to be designated as a Class D creek, which they understand would be suitable for stock watering and irrigation. The creek is not now suitable for either. They further understand that there is a request to change the classification from Class D to a Class E stream, which would permit the flushing of dye stuffs, industrial waste and sewage into the stream.

Those who have filed this brief respectfully make the following request:

1. That Marlowe Creek be designed as a stream suitable for watering stock and for irrigation purposes.

2. That the classification not be changed so as to make it legal to discharge sewage, dye stuffs or industrial waste into the creek.

3. That the North Carolina Stream Sanitation Commission enter an order directing all persons or towns or corporations which may now be discharging dye stuffs, industrial waste or sewage into said Marlowe Creek to cease such practices and forbidding the same.

Respectfully submitted, this the 13th day of February, 1957.

E. M. ROBERTSON
ROBERT G. ROBERTSON
SAMUEL T. ROBERTSON
CLAIBORNE G. ROBERTSON
CROWDER B. ROBERTSON

By /s/ Edwin M. Robertson, M. D.

Counsel:

Bryant, Lipton, Strayhorn & Bryant
Box 666
Durham, North Carolina

STATE OF NORTH CAROLINA

STATE STREAM SANITATION COMMITTEE

STATE BOARD OF HEALTH

RALEIGH, NORTH CAROLINA

L E G A L N O T I C E

Notice is hereby given, pursuant to Section 143-215, General Statutes of North Carolina, that a public hearing concerning pollution of the waters of the Roanoke River Drainage Basin and the assignment of classifications to said waters will be held in the Courtroom of the Halifax County Courthouse, Halifax, North Carolina, beginning at 10:30 A. M., EST, Wednesday, January 16, 1957.

The waters to be considered for classification during this hearing include that portion of the Roanoke River and all of its tributaries lying within North Carolina and comprising the Roanoke River Drainage Basin from the John H. Kerr Dam to the mouth of the Roanoke River in Albemarle Sound. These waters border on or flow through the Counties of Warren, Northampton, Halifax, Bertie, Martin, and Washington.

All persons interested in the classification of the waters in the area are invited to attend and take part in the discussion. Persons desiring to be heard should give notice thereof in writing to the Committee on or before the date of the hearing. It is requested that, insofar as possible, any person desirous of offering lengthy comments and discussion in regard to the proposed classification of the streams, be prepared at the public hearing to offer a written statement to be included in the record of proceedings.

Additional information and copies of the proposed classifications are available in the office of the State Stream Sanitation Committee, State Board of Health, Raleigh, and may be obtained upon request.

STATE STREAM SANITATION COMMITTEE

E. C. Hubbard

E. C. Hubbard, Executive Secretary

PROCEEDINGS AT PUBLIC HEARING HELD IN

HALIFAX ON JANUARY 16, 1957

Note: (The hearing, for the purpose of considering proposed stream classifications for the lower portion of the Roanoke River Basin, was called to order in the courtroom of the Halifax County Courthouse at 10:45 A. M., with approximately 65 persons present, including the following members of the Committee: Mr. J. V. Whitfield, Chairman; Mrs. Karl Bishopric, Vice Chairman; Mr. J. N. Vann, Mr. Walter Clark, Mr. H. Grady Farthing, and Mr. B. C. Snow. Members of the staff present were: Mr. E. C. Hubbard, Executive Secretary; Mr. W. E. Long, Jr., Chief, Pollution Control Section; Mr. W. E. Knight, Chemist; and Mrs. Marjorie T. Carmichael, Recording Secretary.)

J. V. Whitfield, Chairman, State Stream Sanitation Committee, Burgaw, North Carolina, Presiding: Ladies and gentlemen, the meeting will please come to order. It is indeed a pleasure for the State Stream Sanitation Committee to be with you here today in the historic Town of Halifax. It is a pleasure also to be here on the duty for which we come; namely, to begin the task of abating stream pollution in the great Roanoke River waterway. During the next few hours we will discuss suggested classifications for the lower portions of the Roanoke River Basin.

Kindly permit me to introduce members of the Committee at this time. At the end of the hearing each member will be given the opportunity of making any comments they may wish. Beginning on my extreme left is Colonel B. C. Snow. The Colonel heads the Division of Water Resources of the Department of Conservation and Development and by law is ex officio member of the Committee. Next is Mr. J. N. Vann of Ahoskie. Mr. Vann represents municipalities. Then I take pleasure in introducing to you our lovely Vice Chairman, Mrs. Karl Bishopric of Spray. She represents textiles. To my right is Mr. Grady Farthing of Boone. Mr. Farthing represents wildlife resources. Mr. J. M. Jarrett, head of the Division of Sanitary Engineering of the Department of Health, is the other ex officio member of our Committee but could not get here this morning because of the icy conditions of the roads. Mayor Berkeley of Goldsboro, the other representative of municipalities, was with us yesterday at Yanceyville but was unable to be here with us today because he had an appointment with General Twining at Seymour Johnson Field. Mr. Walter Clark of Lincolnton, who also represents industry on the Committee, was with us yesterday at Yanceyville but who spent last night in Raleigh on his way here, telephoned that he is unable to be with us because of the ice. Also, please permit me to present the members of our staff who are present: Mr. E. C. Hubbard, Executive Secretary of the Committee; Mrs. Marjorie T. Carmichael, Secretary; Mr. W. E. Knight and Mr. Wilbur Long. We are all very happy to be here with you this morning.

For your information, I would like to point out that we have classified the Yadkin, White Oak and Chowan River Basins. We will classify the French Broad this summer, the Cape Fear in the fall and the Neuse River next year. Permit me to assure you that we come here as your friends. We are not a punitive Committee. We are here to cooperate with municipalities and industry to make North Carolina a better State and we cannot be a better State unless we abate the pollution of our streams. We will endeavor to see that everyone's suggestions and recommendations are given fair consideration.

Yet you must understand that our decisions will be rendered on what is best for the State of North Carolina as a whole. Our Executive Secretary, Mr. Hubbard, will now take charge of the meeting.

E. C. Hubbard, Executive Secretary, State Stream Sanitation Committee, Raleigh, North Carolina: Mr. Chairman, members of the Committee, and ladies and gentlemen, I would like to begin by expressing the appreciation of the Committee and its staff for your interest in the stream sanitation program as manifested by your presence this morning. I can assure you that the Committee is anxious to have your advice and your recommendations pertaining to the classifications suggested for the waters of the Roanoke River Drainage Basin, particularly that portion of the basin under consideration this morning.

As most of you perhaps already know, this is the second of two hearings scheduled to be held in the Roanoke River Basin. The first hearing, held yesterday morning in Yanceyville, dealt with those waters comprising the upper portion of the basin, extending down to the John H. Kerr Reservoir Dam. The waters under consideration at this hearing are those of the basin which drain those portions of North Carolina extending from the John H. Kerr Reservoir Dam to the mouth of the river in Albermarle Sound. These waters drain or flow through Warren, Halifax, Northampton, Bertie, Martin, and Washington Counties. In this connection, if there are persons here who did not attend the Yanceyville hearing and would like to make a statement relative to the classifications proposed for the waters of the upper portion of the basin, they will be permitted to do so during the proceedings today.

It will not be the purpose of the hearing today to discuss information concerning pollution abatement needs in the lower Roanoke River area. Such information can be determined only after the waters have been officially classified and the quality of water required has been established. The final classifications of the waters must, of course, await the completion of our hearing so that due consideration can be given to the comments and discussions presented during each hearing.

As Chairman Whitfield mentioned, we have spent two years studying the waters of the Roanoke River Basin. A lot of work has gone into these studies and in the development of the report. A copy of the report has been sent to all persons listed on our official mailing list, to all industries and municipalities contributing pollution to the waters in the basin, and to all others who have requested copies. We hope you have had an opportunity to study the report and the suggested classifications for the various streams and waters within the basin and that you will feel free to offer the Committee your comments and advice. This is your hearing and your opportunity to tell the Committee what type of program you want, what classifications you desire for the waters in your area, and for what usage you wish the waters protected.

As already indicated, you will be given an opportunity to offer your comments during the course of this hearing; however, if you prefer to wait, the law provides that anyone may present a written brief within thirty days after the hearing. In this connection, you were furnished a blank upon entering the room for your use in indicating your desire to be heard. Please complete it, if you have not already done so, and pass it up to the speaker so that you may be recognized at the proper time.

In order to simplify the meeting, we propose to divide the meeting into three parts. The first portion will consist of a discussion of the general principles in holding meetings of this kind and in the development of our program. The second portion will consist of an explanation of the report and the suggested classifications. The third portion will be devoted to comments and statements from those of you who have indicated a desire to be heard by the Committee. You are, therefore, requested to hold any questions or comments you may have until you are properly recognized. In this connection, we are required to record all discussions and comments; therefore, all speakers are requested to come to the microphone, state your name, address, and whom you are representing. It is necessary for us to have that information in order to properly record your statements.

Concerning the State Stream Sanitation Law and the Policies of the Committee, I believe the Declaration of Policy as contained in the first section of the law to be of sufficient importance to justify reading it. The Declaration of Policy as established by the Legislature is given in Section 143-211, of the General Statutes as follows: "It is hereby declared to be the policy of the State that the water resources of the State shall be prudently utilized in the best interest of the people. To achieve this purpose, the government of the State shall assume responsibility for the quality of said water resources. The maintenance of the quality of the water resources requires the creation of an agency charged with this duty, and authorized to establish methods designed to protect the water requirements for health, recreation, fishing, agriculture, industry, and animal life. This agency shall establish and maintain a program adequate for present needs, and designed to care for the future needs of the State."

As explained to you by Chairman Whitfield when he introduced the members of the Committee who are present, the Committee is composed of eight members appointed to represent the various aspects of our economic society. Two members represent industry, two represent municipalities, one represents agriculture and one represents wildlife. There are two ex officio members of which one, Colonel B. C. Snow, represents the State Department of Conservation and Development, and the other, Mr. J. M. Jarrett, represents the State Board of Health.

In order to carry out a comprehensive program, the Committee is given the authority to study and investigate all problems concerned with pollution; to take appropriate steps to obtain correction of existing pollution and to prevent new pollution; to promote voluntary pollution abatement projects; to issue and enforce special orders requiring pollution abatement; to receive and examine plans, specifications, reports and other data; to issue Certificates of Approval covering voluntary projects; to issue Permits for the discharge of waste and sewage into the waters of the State; to conduct scientific experiments, investigations and research; to make investigations and inspections to effect compliance with any orders, rules and regulations of the Committee; and to furnish technical advice, recommendations and assistance regarding sewage and waste treatment and disposal problems.

There are also certain other duties required of the Committee by the Statute. These are as follows: (1) It was required to develop and adopt, after proper study, a series of classifications and water quality standards which would be appropriate for the purpose of classifying each of the waters of the State in such a way as to promote the policy and purposes of the

Statute; (2) To survey all the waters of the State and to separately identify such waters as the Committee believes ought to be classified separately in order to promote the policies of the Statute, omitting only such waters as in the opinion of the Committee are insufficiently important to justify classification or control under the Article; (3) To assign to each identified water of the State such classification, from the series adopted as specified above, as the Committee deems proper in order to promote the policy and purposes of the Article.

The Classifications and Standards were adopted in 1953, and have been given wide distribution. We have copies with us this morning and will be glad to make them available to anyone desiring them. The Committee's responsibility is to select the proper classification into which the waters of each stream or lake should be placed. The Committee can do this only after conducting detailed studies and holding public hearings. Therefore, the purpose of this meeting is to get the advise of the public regarding which of these classifications should be assigned to any particular stream in the lower portion of the basin.

In connection with the classifications and in order to make the second portion of this meeting more understandable I would like to review briefly the various classifications available for assignment to the streams in the Roanoke River Basin. In the series of classifications, we have six fresh water classifications. The first is known as Class "A-I" and the best usage of the water to which this classification refers is as follows: As a source of public water supply for drinking, culinary, or food processing purposes or any other usage requiring water of lower quality. The conditions that would justify the assignment of Class "A-I" are as follows: This class is intended primarily for waters having watersheds which are uninhabited and otherwise protected as required by the State Board of Health and which require only approved disinfection by chlorination, with additional treatment when necessary to remove naturally present impurities, in order to meet the "Public Health Service Drinking Water Standards" and will be considered safe for drinking, culinary, and food-processing purposes. In other words, this classification would be assigned to waters used as public water supplies, such as is the case in the City of Asheville where the municipal water supply is obtained from a protected mountain watershed and is chlorinated before it is distributed to the people in Asheville as their public water supply.

The second class is Class "A-II" waters, some of which we have in the Lower Roanoke River Basin. Class "A-II" waters are intended as a source of public drinking water supply. The conditions related to the best usage of these waters are as follows: The waters, if subjected to approved treatment equal to coagulation, sedimentation, filtration, and disinfection, with additional treatment if necessary to remove naturally present impurities, will meet the "Public Health Service Standards" and will be considered safe as a source of drinking water supply. I believe that we have at least one stretch of the river above the Roanoke Rapids Reservoir Dam that is suggested for classification in Class "A-II".

The third classification is Class "B". The best usage is bathing and any other uses except as a source of drinking water supply. The conditions related to the best usage are: The water under proper sanitary supervision by the controlling health authorities, will meet accepted standards of water quality for outdoor bathing places and will be considered safe and satis-

factory for bathing purposes. It will also be suitable for other uses requiring water of lower quality. I would like to make this point clear, that any of the higher classifications will also be suitable for other uses requiring water of lower quality. For instance, Class "A-II" water will be suitable for bathing, fishing, agriculture and other purposes that require water of lesser quality. That holds true throughout the entire series of classifications.

The fourth classification is Class "C" and is intended to denote waters used primarily for fishing and other uses except for bathing and as a source of public water supply. The conditions related to this best usage are: The waters will be suitable for fish and wildlife propagation; also, suitable for other uses requiring water of lower quality.

The fifth classification is Class "D". The best usage is for agriculture, industrial cooling and process water supply, fish survival and any other usage, except fishing, bathing and as a source of water supply for drinking, culinary or food-processing purposes. The conditions related to this best usage are: These waters without treatment and except for natural impurities which may be present therein will be suitable for agricultural uses and industrial cooling and process water and will permit fish survival. It does not mean that fish would normally propagate in these waters but the fish will not die in water of this class. In other words, waters in this class would not provide the most desirable fish propagation area, but any fish which may enter these waters will not be killed because of pollution. These waters of course will be usable, after special treatment, for industrial purposes such as process, cooling water, etc.

The last classification is Class "E", which is the lowest class in the series. The best usage of waters in this class is for navigation and disposal of sewage, industrial wastes, or other wastes, and any other uses except for agriculture, source of industrial cooling waters, fishing, bathing, or source of water supply for drinking, culinary or food processing purposes. In other words, this classification recognizes that some streams are more important as a vehicle for transporting our wastes away from our municipalities and industries and that they mean more in the public interest when used for that purpose than they would if used for other higher class purposes. However, there is no provision in any of the classifications which would permit the maintenance of nuisance conditions within any stream.

I would like to say a few words with reference to the Roanoke River Report. The report contains data developed through actual laboratory studies of existing stream conditions, field investigations of existing significant sources of pollution, and surveys of stream uses for public and industrial water supply, power production, agricultural purposes, bathing, fishing, and for sewage and industrial waste disposal. In other words, during the process of studying the river we attempted to locate the sources of pollution and the kinds of pollution being discharged into the stream, as well as to determine what other usage is being made of the stream. The data concerning existing stream uses for water supply, waste disposal, power production, etc., were obtained through actual field studies, while the information pertaining to the uses of the various streams for bathing, recreation, agriculture, fishing, and other related uses was obtained through interviews with persons well acquainted with the area, such as County Health Officials, Wildlife Protectors, County Farm Agents and other interested persons. We attempted to contact all the people who are interested in these particular uses and get their comments and also information from them concerning the extent of these uses.

In studying this report, it should be borne in mind that the measurement of the effects of pollution discharges upon a stream is made difficult by the varied characteristics of different pollutants, the varying requirements of water quality for different uses, irregular stream flows, the effects of tidal action, and the lack of simple devices and units available for pollution measurements. I think it would be well to review some of the ways in which pollution affects a stream, because an understanding of how pollution may affect a stream and in what degree the stream may be affected by pollution is important in the interpretation of the report and also in understanding why and how we arrived at some of the suggested classifications. The quality of stream water may be impaired in several different ways (1) by pollution that increases bacterial loads such as domestic sewage, (2) by pollution that reduces the oxygen in the stream such as sewage and organic wastes from industry, (3) by pollution that introduces solids or liquids that tend to either settle or float, thereby creating sludge banks and unsightly conditions, (4) by pollution that adds color, turbidity, acids, salts, or other objectionable characteristics to the water, and (5) by pollution of a definite toxic or poisonous nature. Any stream may be affected differently by any of these different types of pollution. These pollutional effects may become apparent immediately below the point of discharge, as in the case of floating solids and colored wastes which may be seen immediately below the point of discharge, or they may not show up for several miles downstream. Likewise, some of the pollutional effects persist for very short distances, whereas others may persist for distances of miles and even hundreds of miles below the point of discharge.

The seriousness of any pollution problem is also influenced by the uses made of the receiving stream. For instance, a stream used as a source of public water supply would be more seriously affected by pollutants, which would increase the bacterial content, than would streams used for agricultural purposes or for an industrial cooling water supply. Likewise, a stream used for fish propagation would be more seriously affected by toxic pollution than by pollution which increases the hardness of the water.

Inasmuch as pollutants vary in their effect upon streams and since the amount of such pollutants permissible is governed to a large extent by the stream usage, stream flows and other characteristics, such as velocity of flow, topography, water temperature, etc., it is logical that there would be no simple test that would indicate the presence and extent of pollution; hence, it is difficult to detect or evaluate pollution except through many analyses made over considerable periods of time and under conditions as near critical as practical. That is one reason why it requires two summers to make and complete a river basin study. Operating schedules of industries sometimes result in slugs of wastes at infrequent intervals which tend to further complicate the problem and make it difficult to evaluate the seriousness of the pollution unless the sampling interval is frequent enough and sampling is carried on over a long enough period to catch the slugs of wastes.

In our discussion of the pollution in the Roanoke River Basin which is to follow we are necessarily limited in time; therefore, the description of existing pollution and its effect upon the streams can be given only in general terms. For detail information you will still have to go back to your report. This report, however, is based upon the data collected by actual laboratory analyses, field studies, and conferences over a period of more than a year and under varying conditions. We feel, therefore, that the report represents an accurate picture of present stream conditions.

I think in this particular case it is also important to review the significance of stream flows in relation to pollution. The volume of water flowing in a stream receiving discharges of sewage or industrial wastes is a prime consideration in determining the amount of pollution that a stream can carry without harmful effects and, therefore, greatly influences the pollution abatement needs. Also, the existing quality of the water into which the pollution is discharged, as well as the stream usage, must be given thorough consideration. In arriving at the allowable amount of pollution that can be safely discharged into a given stream, these together with other factors, such as flow regulation by dams, tidal effects, etc., are given consideration.

Under natural conditions, stream flow will vary over a wide range. High flows usually occur during the winter and early spring months when temperatures are low. Dry weather or low flows ordinarily occur during the summer and fall months when highest water temperatures prevail. In other words, the low flows usually occur during periods of high temperature which aggravates the critical conditions. We have dry years and wet years and stream flow will vary accordingly, and there is nothing we can do about it. In view of this, we have to provide adequate corrective works for treating the sewage and wastes to such degree as will protect the stream during the critical periods. When dams are constructed on streams to impound the waters, records of natural stream flow on longer hold true. Obviously, in such cases the flow in the stream for some distance below the dam will depend upon the amount of water released from the dam and will fluctuate accordingly. Likewise, natural stream flows do not hold true in waters affected by tides.

The stream flow data, watershed areas, and stream mileages given in the report were furnished by the U. S. Geological Survey Office in Raleigh. The flow data recorded in the report represent the stream flows at the time samples were collected and do not necessarily represent critical flow conditions. So anyone attempting to interpret this report in relation to critical conditions should not use the flows that are recorded in the report. Those records of flow are intended only to indicate the flow at the time the samples were collected.

This concludes the first portion of the hearing and I hope that the comments that have been made will enable you to better understand the requirements of the Statute as well as the aims of the program that the Committee is attempting to establish. The next portion of the hearing will be conducted by Mr. W. E. Long, Jr. of the State Stream Sanitation Committee staff, during which time I think that he will attempt to point out the various existing sources of pollution, our findings pertaining to the uses being made of the streams, and the classifications that have been suggested. I want to underline the word <u>suggested</u>. The classifications given or proposed in the report are suggested only. They have not been officially adopted by the Committee and no official action will be taken until the Committee has completed the public hearings and has had an opportunity to study the information and recommendations given to it by the people through the public hearings. Anyone who has gotten the impression that the classifications proposed are final classifications should correct that impression and recognize that official action of the Committee can be taken only after the hearings are completed. At this time, I would like to introduce Mr. W. E. Long, Jr., Chief of the Pollution Control Section of the State Stream Sanitation Committee, and ask him to present the information pertaining to the suggested classifications, sources of pollution, etc. Mr. Long.

Mr. W. E. Long, Jr., Chief, Pollution Control Section, State Stream Sanitation Committee, Raleigh, North Carolina: Thank you Mr. Hubbard. Members of the Committee, gentlemen, in presenting the recommended classifications, I am going to follow closely Table No. 7 as given in the report. If you do not have a copy of the report and if you would like to have a copy, we have some with us and will be glad to give you one. You may desire to follow me as I present the information therein. We have a map here showing the lower portion of the Roanoke River and tributary streams. The tentative classifications are shown in various colors. If you cannot see the map, and you perhaps cannot, please turn to map no. 4 on page 23 of the report and you will see the same map, except it is not colored like the one here. The tentatively recommended classifications for the surface waters in the Roanoke River Basin are given in Table 7, pages 158 to 170. These recommendations are considered to represent the best usages of the streams in the interest of the public and are submitted to all concerned for consideration at our public hearings and by the State Stream Sanitation Committee in its determination of the final classifications to be assigned. I would like to point out that any stream which is not shown on the map or mentioned in the table, will carry the same classification as the segment of the stream to which it is tributary.

Now, if you will keep in mind the classifications that Mr. Hubbard gave you a moment ago, "A-I" for drinking water without treatment or just chlorination; "A-II" for drinking water with the usual methods of treatment including sedimentation, sand filtration, and disinfection; "B" for bathing; "C" for fishing; "D" for agriculture and industrial process water and "E" for navigation and waste disposal. We have them shown in different colors. The "A-II" is shown in blue; the "B" in orange; "C" in green; "D" in red; and the "E" in purple. If you can see the different colors on the map it will, of course, help you.

As you will note on page 158, we have divided the report into various sections for ease in presentation. The main stem of the river is shown in Roman Numerals. Tributaries to the main stem are shown as capital letters. Tributaries to a tributary are shown in Arabic numbers and tributaries to the tributary to the tributary are shown in lower case letters and so on. You will note, on page 158 that we start with the upper portion of the basin which was the subject of a public hearing yesterday at Yanceyville and during which we covered Roman Numerals I, II, and III. For our purposes today we shall begin with Section IV, on page 166, which covers the Roanoke River from the Virginia - North Carolina State Line to Roanoke Rapids Dam. In order to reduce the repetition of saying these words so much, the first thing I will give you is the name of the stream or segment of the stream, second thing is the best usage that we found being made of the waters in that segment of stream, and lastly the proposed classification. So if you will keep in mind that order and follow along with me, I won't have to repeat each time the words "best usage" and "proposed classification". You will understand that the first thing I give you will be the name of the stream, the second thing will be the best usage, and the third thing the proposed classification.

(Note: Mr. Long presented the recommended classification for each stream in the lower portion of the river basin beginning with Section IV on page 166 and continuing through page 170 of the Roanoke River Basin Pollution Survey Report.)

Senator Whitfield: We will now begin the last phase of our hearing and give you a chance to make any comments that you wish. Please let me repeat again that we have been pleased to come to Halifax to consider suggested classifications of these streams which, I believe I am correct in saying, carries more water into the ocean than any other river in the State. Therefore, it is one of the most important waterways of North Carolina.

Perhaps some of you would like to know who the young gentleman is that is sitting at the far right at this time. We are happy that Mr. Clark was finally able to skate in from Raleigh.

As I said in the beginning, we are not here to put anybody out of business, but we are here to protect the water of North Carolina in the Roanoke River Basin. We are very confident that all the industries represented here realize that its water has to be usable. You don't think anything of paying seven cents a gallon gasoline tax to give you a good highway. Please remember that down the pages of history it is recorded time and time again that civilizations have disappeared because of the lack of water or because of polluted water, and usually pollution begins with the decrease of your usual water supply. You see, no civilization is destroyed because of lack of hard surfaced roads. We are building roads, and properly so. We want the best roads possible. They are taxing all of us to do that. Yet, how much more important to our lives is water? To ask that question is to answer it. Therefore, we should not mind taxing ourselves. Our industries and our municipalities should not mind taxing themselves to protect our waters. The trouble is, we didn't start work on our water problem soon enough in North Carolina as is the case in many of the other States. May I bring to your attention the fact that it is estimated that $12,000,000,000 will be required to clean up the streams in the United States today, to make the water usable. Water that is not usable, as I also said in the beginning, is valueless. Please remember that fact. Everytime you think about trying to raise money to give yourself good water and an adequate water supply, remember you are taxing yourself for roads and that water is more important. We don't seem to object too much to paying tax on roads so why should we object to paying taxes to enable us to have good water.

One of our municipalities recently voted not to improve its sewage treatment plant, and it had filed an application for a grant from the U. S. Government and the application was going to be approved. The United States Government was going to make them a grant of 30% - give it to them - to improve their sewage treatment facilities provided the town put up some money of its own, and the voters defeated the bond issue. Can you imagine anything more stupid? I am quite sure, however, that the people of North Carolina are beginning to realize the importance of water. If they don't, all they've got to do is look at the pictures of President Eisenhower out in the southwest today and yesterday. We are becoming a desert out there because of lack of proper water conservation. You say it can't happen to us here in the east? It certainly can. Maybe not a desert, but we can pollute our waters so that they will not be usable. Our civilization and our economy depend on an adequate supply of good water, not polluted water. That's our duty and we're not going to shirk it. May I say, we are quite confident that you are going to cooperate with us. We are not going to be unreasonable, but we are going to demand certain standards that you will have to meet. I am quite confident that you are willing to pay for clean water. Of course civilization depends on that. Now Mr. Hubbard you can call on those who would like to make comments.

Mr. Hubbard: Gentlemen, as indicated several times, this portion of the hearing will be devoted to comments and recommendations from the people attending the hearing. As you entered the building you were given a form on which you could indicate your desire to be heard and you were advised that you would be recognized during the proper portion of the hearing. That part of the hearing is now in session and I shall recognize those who have indicated a desire to be heard. It is also understood that anyone who may have indicated that they did not care to make a comment, may do so provided they will make their desire known to us. Certainly the Committee will be glad to have you make any statement you like.

The first person I wish to recognize is attending the hearing today in the interest of the Southeastern States. I refer to Mr. Lewis A. Young, Assistant Regional Engineer with the U. S. Public Health Service Regional Office in Atlanta, Georgia. Mr. Young, we will be glad to have your comments at this time. Will you come to the microphone, please sir?

Mr. Lewis A. Young, Assistant Regional Engineer, U. S. Public Health Service, Atlanta, Georgia: Ladies and Gentlemen of the Committee, it has been my pleasure to work with the State of North Carolina since the start of your program, and I've seen it develop and I can appreciate the amount of work that your staff has put into the report under consideration. I hope all of you will realize how much work is involved in preparing the data necessary for use in properly and fairly allocating these waters for the many uses which must be made of them if the State is going to develop. This meeting is not for the purpose of discussing specific problems; however, I would like to mention a cooperative study which is underway with the U. S. Fish and Wildlife Service, other Federal Agencies including our own, industries, municipalities and other interested people. We are working to determine the effects of water uses on some of the natural resources of the stream, such as the fishery. This study will be carried to completion so that we will get facts on which to base a just allocation of these waters. I think this is an indication of the thoroughness with which the Committee is going about its task, and I think the Committee members and their staff are to be congratulated on what they have done so far and their plans for the future. Thank you.

Mr. Hubbard: Thank you Mr. Young. The next person to be recognized is one of our co-workers from the State of Virginia, Mr. D. F. Aderholdt, Chief Chemist of the Water Pollution Control Board of the State of Virginia. Mr. Aderholdt, do you have something you would like to say?

Mr. D. F. Aderholdt, Chief Chemist, Water Control Board of Virginia, Richmond, Virginia: I would just like to bring greetings from the staff of the Water Pollution Control Board and to commend the North Carolina group on the excellent work that they have done and to assure you of our continued cooperation in our mutual problems.

Mr. Hubbard: Thank you, Mr. Aderholdt. We have another representative from one of our important governmental agencies. I refer to Mr. William S. Davis, Fishery Research Biologist, U. S. Fishery Laboratory, of Beaufort. He did not indicate that he would like to make a statement, but I should like to recognize him and if he has some comments, certainly we would appreciate hearing them. Mr. Davis.

Mr. William S. Davis, Fishery Research Biologist, U. S. Fish & Wildlife Service, Beaufort, North Carolina: I have no comment.

Mr. Hubbard: Thank you, sir. We also have with us Mr. Arthur W. Dickson, Fisheries Investigator with the North Carolina Wildlife Resources Commission in Raleigh. I think most of you people know Mr. Dickson. At any rate, we would be glad to hear any comment that Mr. Dickson wishes to make.

Mr. Arthur W. Dickson, Fisheries Investigator, North Carolina Wildlife Resources Commission, Raleigh, North Carolina: Ladies and gentlemen, members of the Committee, we of the Wildlife Commission have one primary aim in our existence and that is to see the continuation of the fisheries of the State of North Carolina. We are trying to improve them: we're trying to keep what we have. The Roanoke River is one of our most important streams flowing into the Albemarle from the standpoint of fisheries. The lower sections are very important in the spawning and migration of herring and constitute an important sport and commercial fishery. The condition of the river controls the migration of fish into the river. The fish will not enter a river which is polluted to such a degree that they cannot live. The upper section of the river from Roanoke Rapids south forms the most important spawning area for the striped bass. This area supplies those young fish which will grow and inhabit the waters of the Albemarle Sound and its tributaries. If this spawning area is destroyed - is not continued - our fish population will suffer. The Roanoke River should be maintained for fish for this reason alone, if for no other. Thank you.

Mr. Hubbard: Thank you, Mr. Dickson. I think at this time it would be appropriate to read a telegram which I received this morning from a representative of the U. S. Wildlife Service, Mr. W. L. Towns of Atlanta, Georgia. He advises as follows: "This service concurs in your Committee's proposed classification of the Lower Roanoke River as a fishing stream. Studies presently underway show that the striped bass fishery, both sport and commercial, is extremely important and must be protected. The maintenance of a suitable habitat is essential for the fish and for this type of recreational use." - signed W. L. Towns.

I would like to recognize and introduce to this group, Senator W. Lunsford Crew, who has been interested and most helpful in connection with the Roanoke River pollution studies and the Roanoke River problems. He did not indicate a desire to speak, but I hope that he will. In any event, I would like to have him stand. Senator Crew.

Honorable W. Lunsford Crew, State Senator, Roanoke Rapids, North Carolina: Members of the Committee, ladies and gentlemen, I have no comment except to commend you people on the very fine job that you are doing, welcome you to our community, say that we hope that your stay will be pleasant, and that your return home will be safe and your return here will be soon.

Mr. Hubbard: Thank you, Senator Crew. I would now like to introduce and recognize Senator Ernest L. Owens of Plymouth, North Carolina. Senator Owens.

Honorable Ernest L. Owens, State Senator, Plymouth, North Carolina: I will call attention to the fact that the population of North Carolina, 30 years ago, was less than a million people. I was on Judiciary I in the last Senate, when the Haw River bill, which was introduced by Senator Ralph Scott, was being considered. The condition of the Haw River is terrible.

We could see from studying that bill that if we didn't begin to do a little something about stream pollution the situation would be terrible in all sections of the State, as bad or maybe worse than their situation. Now, let's look at the situation at present. Thirty years ago we had a population of less than a million people, while I think our 1950 census indicates that we have a population of over 4,000,000 people. It is estimated that we have had another million in the past six years. These people have come to the State either on account of industry or some other reason. That means that your Town and my Town and the counties all up and down the Roanoke River as well as the other rivers, are getting their share of the increased population and opportunities brought about by the growth of industry.

This Committee has done a real good job, there's no doubt about it. That book really tells us all something that we didn't know. It is my hope that the community interests and the industrial interests will not try to evade these problems, but get right down shoulder to shoulder and cooperate with one another. The fishing clubs are interested in this problem. When Senator Crew and I run for public offices, we have hunting and fishing clubs on our necks about certain rivers and certain things, and so on, and we know that's something that's big and vital to the community. Some people consider fishing is a heritage and should be preserved. We've got a department in our State which I think is giving this problem Judicial prudence. Gentlemen, that's my speech. I'm here to listen and maybe I can serve the wishes of my people when things come up with reference to pollution in the next Legislature.

Mr. Hubbard: Senator Owens, we appreciate your comments and your interest in our work. The next gentlemen to be recognized is the Clerk of Superior Court in Halifax County, Mr. George A. Hux.

Mr. George A. Hux, Clerk, Superior Court, Halifax, North Carolina: Mr. Hubbard and members of the Committee, I'm not here to make a speech. I want to ask a question so that these men here who are interested in rock fishing, and of course when I say they are interested in rock fishing I do not mean to imply that they are disinterested in the other things, but in order that they may have an intelligent idea of what the Classification "C" means with reference to the industrial waste problem, and I'm speaking particularly of the paper mill, I would like for you to explain what "C" classification means. I think if they understood the classification they would be in a better position to tell the Committee whether or not they favor your Classification "C".

Mr. Hubbard: Thank you, Mr. Hux. I will try to explain briefly what Class "C" means in relation to the fishing industry on the Lower Roanoke River. If Class "C", which is designated as the classification applicable to waters which have as their primary usage fish and fish propagation, is assigned to the waters of the Lower Roanoke River it would mean that the quality of the water must be maintained suitable to support fish life and to encourage fish propagation. It would mean that the waters would be preserved and protected for fishing and that the rock fishery would be protected to the extent that this important industry would be maintained and properly preserved. Does that answer your question, Mr. Hux?

Mr. Hux: Well, I think if you would explain what "C" would mean with reference to the river now. What is it now? In other words, will it be cleaned up some or is it going to stay like it is?

Mr. Hubbard: In order to maintain a "C" classification during the critical periods, the pollution load now on the river will have to be reduced and also the problem of stream flows or flow regulation will have to be solved. That is the objective of the study now being carried on by the Roanoke River Steering Committee, which is a three-year study designed to develop, if possible, an answer to the question of what must be done in relation to stream discharges and stream regulation, as well as in relation to the amount of pollution that must be removed from the stream in order to be able to maintain the quality of water required by a "C" Classification throughout the year, including the critical periods which usually are the periods of low flow and high temperatures.

Mr. Hux: May I ask you, from your tests, what is the classification of the water - what has it been over the last year or two when you tested it?

Mr. Hubbard: I will give you a general answer. Generally, throughout the periods of the cold months, the water quality has been satisfactory. During the periods that we call critical, the summer periods when low flows prevail, the quality of the water has fallen below that which should be maintained to adequately support fish life, so that we have two problems. One is to determine how much pollution abatement is going to be required. The second is that of determining how much water can we depend on being released from upstream reservoirs to flow down the river. Both of these are inter-related and the answers must be determined before we can establish a proper program of stream sanitation for the lower portion of the river. As I mentioned before, this is the subject of the three-year study that is being conducted jointly by the Federal and State agencies involved as well as the industries and municipalities which are cooperating in the particular study, and we hope that it will provide a solution, or at least the answers, as to what must be done in relation to flow and pollution abatement in order to protect the river suitable for the fishery.

I would like at this time to introduce a delegation and I will introduce these people as a delegation because they represent the same industry, and give whoever is designated as the spokesman an opportunity to present any statement they have. I refer to the delegation representing the Virginia Electric and Power Company: Mr. R. M. Hutcheson, who is System Manager of the Virginia Electric and Power Company in Richmond, Virginia; Mr. Ray Goodmen, who is Vice President of the Virginia Electric and Power Company located at Williamston; Mr. James S. Hamilton, who is District Manager at Williamston, and Mr. J. D. Ristroph, Superintendent of Production Results, from Richmond. I shall ask Mr. Hutcheson to present the discussion of the problem from their standpoint and to call upon any other members of his delegation who would like to speak. Mr. Hutcheson.

Mr. R. M. Hutcheson, System Manager-Power, Virginia Electric and Power Company, Richmond, Virginia: Mr. Chairman, members of the Committee, my name is R. M. Hutcheson and I'm System Manager-Power, Virginia Electric and Power Company, Richmond Virginia.

First, let me say that, on behalf of the Virginia Electric and Power Company, I appreciate this opportunity to make a statement to this Committee. It is our sincere desire to furnish the Committee information concerning river conditions in the Roanoke Rapids-Gaston area on the Roanoke River. In fact, we have done so since 1954, when we began systematic

observations of river data in connection with our operation of the Roanoke Rapids Reservoir, and in connection with operations at the Kerr Dam and Reservoir Project.

I am sure this Committee realizes that our Roanoke Rapids Hydroelectric Project is regulated by the Federal Power Commission by its license issued for the project under the Federal Power Act, after extensive hearings before the Commission and in the courts, with which you are familiar. As this hearing is concerned with the classification of the river, I assume there is no need to consider the relation of State and Federal law as to the project, but I naturally can appear and offer a statement here only on the basis that my participation does not waive or affect any rights or obligations under the Federal license.

As we all know, the Roanoke River is partly in North Carolina and partly in Virginia. Any classification which may be arrived at here, and any resulting pollution abatement requirements, it seems to us, must inevitably take into account, in some appropriate way, the possible effect on river conditions in this part of the river by virtue of activities upstream in North Carolina and Virginia. We trust this problem will receive the Committee's appropriate attention.

As we understand it, an "A-II" classification is proposed from the State line to the Roanoke Rapids Dam, and an A-II classification specifies an oxygen content of not less than 4 ppm. I believe that by now we are all familiar with the phenomenon that water at the bottom of a major impoundment may lose a substantial part of its oxygen content in certain seasons of the year. This is true at Kerr, and to a lesser extent at Roanoke Rapids. As a practical matter, this is of little concern for municipal water supply in this portion of the river, since the supply to Roanoke Rapids and Weldon is delivered through a pipeline from the upper levels of the Roanoke Rapids Reservoir. This upper level source provides water which we believe will meet the quality standards of an A-II classification. However, water at the bottom of our reservoir, as well as the river water upstream from our reservoir, closer to Kerr, may not meet the A-II classification at all times. The classification should recognize these conditions.

In our review of the "Pollution Survey Report" under consideration here today, we have found areas of disagreement; in addition, there are questions which occur to us as to the omission of data. In view of our previous comments to the State Agencies, we do not wish to go into the technical aspects of the report. However, by our not taking up in detail our technical questions as to the data, we do not wish to be taken as agreeing with the report in all respects, or as prejudicing our position in the future in any way with respect to other hearings, or in any pollution abatement program or other activity which might ensue from the classification of this river.

We do wish to raise one question as to this report. We find a great deal of difficulty determining what this report appraises as to the actual pollution load on the river. At a number of meetings held during the past year, we have heard the Roanoke Rapids area pollution load stated in amounts several times the loads summarized in this report, and indeed some of the data in the report would indicate loads much greater than as given in the conclusions. No supporting data is given for the loads as summarized. We

would think it important that full information be given as to all important sources of Roanoke River pollution.

We reiterate our earnest desire to cooperate with all public agencies and others involved in working out an equitable solution to the problems on the Roanoke River, particularly when other parties do their fair share. Thank you very much.

Mr. Hubbard: Thank you very much, Mr. Hutcheson. Will that be the only statement from your company or does Mr. Goodmon or Mr. Ristroph care to speak?

Mr. Hutcheson: That will be the only statement.

Mr. Hubbard: At this point, I would like to make a statement to the effect that anyone who does not present information during the progress of this particular hearing will not be precluded from presenting their views in writing to the Committee, so long as they do so within the next 30 days. The Statute provides that anyone may appear at the hearing and make a verbal statement and also have the right, although he appeared at the hearing, to submit a brief in writing to the Committee which will be included in the report of proceedings of this hearing and will be considered by the Committee in its deliberations concerning the final classification of any of the waters in question. So keep that in mind and if you wish to submit a written brief after the hearing is completed, it will be accepted so long as it is submitted within 30 days following the hearing this morning.

The next person whom I would like to introduce and who has indicated that he would like to make a statement is Mr. J. G. Kilian of Ridgeway, North Carolina. Mr. Kilian.

Mr. J. G. Kilian, Ridgeway, North Carolina: Ladies and gentlemen, I'm not much of a speaker - you'll soon find that out, but I'm a fisherman and I'd like to see the river cleaned up from what it has been. I think the gentleman over there said a while ago that they don't want to put anybody out of business. Well, they've put the fishermen, sport and commercial, out of business around Weldon and I suspect they're beating around the bush. Who's doing it? We all know the paper mill is 95% the cause of it. I think every person in here knows it, although they never mention it, and I notice in this report over here that's one thing that's not mentioned in it at all, that first on page 260, I believe, or 160. All the pollution on these tributaries was mentioned, but the Roanoke Rapids Paper Mill is not even mentioned at all, and I think they are doing the most trouble. I think everybody in here knows I'm right. That's a lot to say, but I think something should be done about it. Our fishing is completely ruined here and the river would have been Class "E" last summer, I suppose. This may be kind of ugly to tell, but I had a little dog in my car when I drove over the river and I looked at him pretty hard and I said "something's wrong with you". I opened the window and found that the smell was coming from the outside. All of you know what a terrible scent we had down here. You know, the pollution comes from the paper mill, 95% to 99% of it does.

Mr. H. Grady Farthing, Member, State Stream Sanitation Committee, Boone, North Carolina: May I ask you a question? How long has that condition existed?

Mr. Kilian: It has existed and slightly gotten worse for the last ten years.

Mr. Farthing: Are there any fish in the river at all now?

Mr. Kilian: Yes, I caught a few last year, but they're not fit to eat. They smell like they've got turpentine or something all over them. Pollution, city pollution does not kill fish and it does not stop anybody from eating them. I mean it doesn't smell bad, although it doesn't sound too good because Weldon, North Carolina, dumps all their sewage into Fishing Creek. It's a very small stream and I've been in there in the days when they used to catch fish right below it; they were good to eat although I don't think they were so good moneywise.

Mr. Farthing: When you talk about fish I get interested, because I'm a fisherman, too.

Mr. Kilian: You can't eat those fish you catch at Weldon anymore, they are not fit to eat. We just catch them and take them home and give them to somebody. You can't eat them. Last year I don't think we got hardly any spawn fish. I think the hatchery was empty most of the time. Year before last it was a little better. That river was Class "E" last summer, instead of "C" I think.

Mr. Hubbard: Thank you, Mr. Kilian. I would now like to recognize Mr. W. L. Whitley, Town Attorney for the Town of Plymouth, North Carolina.

Mr. W. L. Whitley, Town Attorney, Plymouth, North Carolina: Mr. Chairman, members of the Committee. As you well know, our Town is located within 8 miles of Albemarle Sound, down near the mouth of the river. We are interested, particularly, in this matter from the standpoint of financing since Plymouth is a poor town. I believe it was John Marshall who said that the power to tax is the power to destroy. We've very nearly reached that point.

Now in our situation, the Town has recently added a large amount of new territory. That calls for the extension of water and sewer lines. Our Town doesn't take its water supply from the river at all or from any other creek, but from a deep well system. We are now engaged in the building of a new water tank of 250 thousand gallon capacity and installing in connection therewith a water softening system. That keeps us practically exhausted from a financial standpoint. Our Town tax rate for years has been two dollars. That added to a county-wide rate of $1.80, makes roughly $3.80 per year. This rate is based upon a high property evaluation, not a low evaluation. The County Commissioners recently called in experts to re-value all the property in the county. The Town has no surplus funds to install a sewage treatment plant. Now, I don't think that any pollution or any sewage that is discharged into the river by the Town, particularly at that point which is in close proximity to the sound, would be of sufficient moment to justify the undue expense that the Town would have in building and maintaining a sewage disposal plant. Other interests vital to be considered, vital in behalf of the suffering taxpayer, that nobody seems to take much thought of nowadays, are the services required to operate the Town. At our Town Board meetings, questions are raised about the ability of the Town to buy sewer or water pipe for a certain locality which is united to the Town. We

had to buy one of those adding machines, or Marchant machine, or something on the desk so the Town Clerk can quickly figure and tell the Town Board if we have money enough the 1st day of June to cover the bill for that particular material. Now, we ask this Committee to study that carefully from our standpoint because it's bad for our small town. We don't have a wealthy town. We don't have a wealthy population. We do have, God knows, our share of taxes to pay. That's the matter that we are interested in and I wish to leave that matter acutely with the Committee.

Mr. Hubbard: May I raise a question for your comment? Do the Town officials of Plymouth concur in the recommendation that the Roanoke River should be maintained suitable for fish life?

Mr. Whitley: Well sir, I am sure nobody has any objection to that, but the question is whether the Committee is going to impose a program that's going to place new burdens upon the taxpayer. Now, this won't take any pollution from our Town or from the industries of our Town. In that case, proximity to the river would have the effect, don't you see, to injure or destroy the Marine life of the river at that point. I don't think so and I'm answering that question specifically, if that's the answer to your question. Now, I saw in the paper some time ago that there was a report made about lack of oxygen destroying fish life up the river a considerable distance above us. Well, of course, that's a condition over which humanity has no control that I know of. The only times that we have had any stagnant water in the river, of course, is when we have the hurricanes and the northeast storms which have a tendency to back the water up on our side of the river, we being on the south side of the sound and the south side of the river. Now, of course, the construction of the dams in the river during recent years, both at Buggs Island and at Roanoke Rapids, will have a tendency, of course, to retard the current in the river. But, I don't think that we have any acute condition on that account. If so, I'm certainly not aware of it. But, gentlemen, what we are interested in now is any course of action that's going to affect the industrial life of our Town and particularly whether it's going to impose a great burden of taxation. Now you can appreciate that a $2.00 tax rate is too much for any town. I've always contended this over the years, but nobody would do anything about it. If you have industry come to locate in your town and community, and our able and efficient Governor is about to start a program to encourage industry in North Carolina, build up our economic life and our income to some extent, the first thing a manufacturer who is prospecting for a plant site wants to know is, not only about your local conditions, but about your tax rate. Now a tax rate of $3.80 is practically confiscatory as I see it. I'm sorry that the Federal Government doesn't realize that we have any taxes to pay except what we have to pay to the Federal Government, but they seem to proceed upon that theory. Gentlemen, in spite of that and on behalf of the Town of Plymouth and as its Town Attorney, I wish to leave this serious dilemma that we are in with you. Every time we have to have a bond issue, we have to go up to Raleigh to see Mr. Easterling and lay the facts before him. In fact, we have to operate under the supervision of the Local Government Commission, submit our budgets to them, etc., and do what they say do. That's pretty serious and it's a serious problem. Taxation has reached a point now that it remains to be seen how much longer our people can endure it.

Senator Whitfield: Mr. Whitley, does the Town of Plymouth have a sewage treatment plant or do you empty your raw sewage directly into the river?

Mr. Whitley: I think the sewage is emptied into the river. We don't have any sewage treatment plant. But if we have to install one, God knows where we're going to get money to do it, unless we take up a collection.

Mr. Vann: Mr. Whitley, I'd like to ask you a question, please.

Mr. Whitley: Yes sir.

Mr. Vann: Is the Town of Plymouth heavily indebted by bond issues?

Mr. Whitley: Yes sir. We owe quite a lot. What is our debt Mr. Riddle?

Mr. Riddle: Two hundred and thirty thousand now.

Mr. Whitley: Two hundred and thirty thousand now. The county has a bonded indebtedness now of three hundred and sixty thousand. While I was County Attorney, I put through three hundred and fifty thousand of that for school purposes. Now they've recently added another bond issue to that of five hundred thousand for school purposes. That would be eight hundred and sixty thousand for the County of Washington, all of which will be for school purposes coupled with the two hundred and thirty thousand the Town of Plymouth owes. That's the situation here. I think if we could go back and review history far enough we would find that Lazarus was born in Plymouth or somewhere around there.

Mr. Vann: One more question, I don't want to engage in technicalities with you at all because I'm your neighbor living pretty close to you and I'm heartily in accord with you that people don't appreciate as they should the people who have to pay the taxes. I agree with you on that most heartily. I live over at Ahoskie and you expressed my philosophy but I'm wondering what the taxable wealth of Plymouth is.

Mr. Whitley: I don't know sir, I haven't seen the new figures. Of course, they are listing now, but the last time I had the pleasure to look at it I think the total revenue of the Town of Plymouth from taxation was roughly a hundred thousand dollars per year, isn't that right?

Mr. Riddle: Yes sir, right at it.

Mr. Whitley: Yes. That question came when the negroes came down and demanded foot for foot of street under the Powell Bill, I think. I had the Town Clerk to compute the amount of taxes that was paid in by the colored population and the amount paid in by the white population. I found out they paid approximately seventy-five hundred dollars, or less than 8% of the total revenue of the Town of Plymouth. We need new fire trucks - we've only got two fire trucks there. One of them is a Spartan, and we've got one that I made the motion to buy when I was a member of the Town Council so long ago I'm ashamed to tell it. I think it was about 1920 or 1921, and we're using that same equipment now. In changing our finances to install our water tank which is absolutely essential and I'll say this, that the present capacity of the tank is 75,000 gallons, and the new tank would be 250,000. The water system there now doesn't have sufficient pressure to operate the valves so we decided before buying the new fire truck there was no need to buy a fire truck if we didn't have something to hook the fire truck to after we got it, so we had to do without that. We ask you gentlemen to consider our plight, we're poor folks.

Mr. Hubbard: We also have with us from the Town of Plymouth, the Mayor, Mr. A. J. Riddle. Mr. Riddle, do you have some statement that you would like to make?

Mr. A. J. Riddle, Mayor, Plymouth, North Carolina: I don't think I care to make any statement since our attorney has said about all I could say.

Mr. Hubbard: Thank you for being here, Mr. Riddle, we appreciate your attendance. We have in attendance Mr. Ben Lancaster, Superintendent of Public Works, Roanoke Rapids Sanitary District. We would like to hear from Mr. Lancaster now.

Mr. Ben Lancaster, Superintendent, Roanoke Rapids Sanitary District, Roanoke Rapids, North Carolina: Mr. Hubbard, members of the Committee. I don't have much to say. I would like to concur in your classification of "A-II" for the water supply, and I would like to say that the Sanitary District would like for it to remain in that classification, and if possible, we would like for you to extend it down to highway 48 bridge. We would like to have you do that. That's about all I have to say.

Mr. Hubbard: Mr. Lancaster, may I ask you to explain your reasons for suggesting that it be extended to highway 48 bridge.

Mr. Lancaster: We have an emergency intake.

Mr. Hubbard: Is your emergency intake operative much of the time?

Mr. Lancaster: I almost had to call on it a couple of weeks ago.

Mr. Hubbard: Is that located in the main stem of the river?

Mr. Lancaster: It is in the channel into the tailrace, the VEPCO tailrace below the dam.

Mr. Hubbard: I believe your intake also serves the Town of Weldon too, doesn't it?

Mr. Lancaster: That is correct.

Mr. Hubbard: I wanted to get your reason for making the request in the records. Thank you very much Mr. Lancaster.

Mr. Lancaster: If you see fit, we would appreciate it.

Mr. Hubbard: Thank you very much Mr. Lancaster. Representing one of our major industries in this area we have with us Mr. K. F. Adams, Executive Vice President of the Halifax Paper Company. We also have Mr. John J. Priest of the Halifax Paper Company. Mr. Adams do you have a statement to make?

Mr. K. F. Adams, Executive Vice President, Halifax Paper Company, Inc., Roanoke Rapids, North Carolina: This is a statement of Halifax Paper Company at the January 16, 1957, public hearing conducted by the North Carolina State Stream Sanitation Committee in connection with the classification of the Roanoke River.

The State Stream Sanitation Committee and its staff are to be commended for the efficient manner in which they have prepared the Roanoke River Basin Pollution Survey Report (1956).

Halifax Paper Company does not object to the recommendation of the State Stream Sanitation Committee that the main stem of the Roanoke River from the Roanoke Rapids Dam downstream be classified as a Class C stream for fishing, provided that in so doing Halifax Paper Company is not denied its fair share of the future use of the river.

It is the opinion of Halifax Paper Company that its fair share of the future use of the river would include, but not necessarily be limited to, the following:

1. A reasonable guarantee that any present or future upstream user of the river would provide that the river water as it reaches the Halifax waste outfalls would be of sufficient quantity and quality to provide the river with a downstream assimilating capacity of sufficient magnitude that the Halifax portion of permissible pollution loading on the river would be not less than 60,000# of 5 day 20°C. Biochemical Oxygen Demand (B.O.D.) per day during the most critical period of the year and at the lowest permissible instantaneous rate of flow.

2. The above stipulation refers to periods of minimum flow. It is recognized that the operation of the hydro electric projects upstream from Halifax will provide an average daily flow in excess of the minimum or off peak flow. Halifax feels that in addition to the above minimum it is entitled to an assurance of the use of some portion of the greater average daily flow. The application of such provision might enable Halifax thru proportional discharge of waste to place on the river an average daily pollution loading of approximately 107,000# of B.O.D.

3. Further, Halifax feels that its fair share of the use of the river should include the provision that, no matter what criteria might be employed to determine the flow of the river (unless further studies reveal conclusive evidence to the contrary) under no circumstances would the instantaneous flow of the river be permitted to go lower than the following, based on U.S.G.S. gage measurements at the Roanoke Rapids Station:

Month	Minimum instantaneous rate of flow - C.F.S.
January thru April	1000
May	1250
June thru September	2000
October	1600
November and December	1000

The above are the minimum sanitation flows recommended by the Roanoke River Steering Committee in 1955 to apply during the period of river study.

If the classification of the main stem of the Roanoke River as Class C for fishing from the Roanoke Rapids Dam downstream would for any reason prevent Halifax Paper Company from being given permission to use the river in the future to the extent indicated above as a minimum, then Halifax would like to have the opportunity of restating its position as far as the proposed Class C classification is concerned.

For the past several years Halifax Paper Company has been engaged in a program designed to reduce its pollution load on the river. This has been done with the knowledge of representatives of the State Stream Sanitation Committee. The Roanoke River Basin Pollution Survey Report (pages 46 and 47) shows that the Halifax plant waste load on the river in 1953 was 90,000 lbs. of B.O.D. Since that time the production, of the plant has been increased about 20%. In spite of this increase in production, Halifax has reduced its pollution loading to a figure less than the 90,000# found in 1953. This reduction has been obtained as a result of considerable financial expenditure by Halifax. It should also be borne in mind that if Halifax is granted use of the river in keeping with the above, and if the future of Halifax follows a normal industry pattern, then it will be necessary for Halifax in the future to spend considerable additional sums of money in the interest of stream sanitation to be able to operate within the pollution loading figures mentioned above. This is essential if Halifax is to remain in a competitive position with the rest of the Southern Paper industry.

There are two natural resources that play a major role in the selection of a site for a pulp and paper mill. These are an adequate supply of wood and an abundant supply of water. It is certain that no pulp and paper mill could competitively exist without both of these. The first Kraft pulp in the United States was made by Halifax Paper Company in February 1909 at the Roanoke Rapids plant, and the abundant supply of water provided by the Roanoke River was a very important factor in locating the mill at Roanoke Rapids.

Over this long period Halifax has been an important economic factor in the development of the Town of Roanoke Rapids and the outlying area from which pulpwood is drawn. At the present time there are approximately 700 persons employed by Halifax at the plant and approximately 1400 additional persons are engaged in the procurement of pulpwood necessary for operation of the plant. These 2100 workers and their families constitute a group of 8400 persons whose economic well being is directly dependent upon continued operation of the Halifax plant. The annual payroll of Halifax is approximately $3,500,000, and an additional $5,500,000, is spent in the area for pulpwood, raw materials, and other operating supplies. The operation of Halifax Paper also has increased land and pulpwood stumpage values, especially within the 25 to 30 mile truck hauling distance from the mill. In this area the value of a cord of pulpwood stumpage is about twice the average value in North Carolina. In the same area the value of an acre of timberland is also greater than the average for the state, since the value of land reflects the value of its products.

At this time of considering the classification of the lower Roanoke River, Halifax would like to mention one set of facts. The principal fishing interest in the river from Roanoke Rapids to Hamilton is in the rockfish during their relatively short spawning period. If this stretch of the river can be classified as Class C at all times and the other problems of the Roanoke River satisfactorily solved then such an arrangement would be preferred. However if this stretch of the river being classified as Class C at all times seriously conflicts with the solving of the other river problems then consideration might be given to classifying it as Class C during the rockfish spawning period when increased flows are provided and a lower classification during the remainder of the year.

Halifax Paper would also like to go on record as not opposing further hydroelectric developments on the Roanoke River which are in the public interest, provided this can be accomplished without excessive degrading of water quality or dimunition of quantity, which could be harmful to down-stream users.

As a member of the North Eastern North Carolina community Halifax would like to go on record as favoring the concept that provision should be made for adequate quality and quantity of water during the rockfish spawning season to insure the successful spawning and maintenance of this fishery, which is so important to the recreational and economic life of the community.

Respectfully submitted,

HALIFAX PAPER COMPANY, INC.

Mr. Hubbard: Thank you, Mr. Adams. Are there any questions that the Committee would like to ask Mr. Adams? Mr. Priest, would you like to add anything to the statement made by Mr. Adams? I believe, Mr. Adams, that Mrs. Bishopric would like to ask you a question.

Mrs. Karl Bishopric, Member, State Stream Sanitation Committee, Spray, North Carolina: Mr. Adams, would you care to tell us whether or not the construction of the proposed Gaston Dam would affect the water available to you? Has any statement been made about that problem? I have been reading a little about the proposed Gaston Dam, but I haven't read very much about it.

Mr. Adams: That's a little bit embarrassing since we would have no particular control over or bearing on the proposed Gaston Dam. I would prefer that you ask your question to the Virginia Electric & Power Company. It would just be a little bit embarrassing for us to say what they are or are not going to do. I just feel like they are better qualified than I am to make such a comment. I would feel that I am not qualified to answer.

Mr. Hubbard: Thank you, Mr. Adams. We have with us several people representing the Town of Weldon. The first person I would like to recognize is Mr. C. R. Daniel, Attorney for the Town of Weldon. Mr. Daniel.

Mr. C. R. Daniel, Attorney, Town of Weldon, Weldon, North Carolina: Mr. Hubbard and members of the Committee. We didn't come up here to make any speech today. We just merely want to concur in the classifications that you have suggested for the river above the dam on down the river and I want this particular point cleared up if you can clear it up for me. At this time, as you know, Weldon and Roanoke Rapids get their water supply from up above the dam. We have a pipe line coming down to Weldon. It has a gravity flow capacity of a million gallons per day. We presently use about a quarter of a million gallons. Now, my people are interested in this and I don't know whether you are concerned with it or not. If you are not, we want to know. If you are, we want to know. In case our future demands should be more than they are now or if our demand should be more than what comes in by gravity in that pipe line, will you take care of it or will we have to look to the people that we are getting it from now?

Mr. Hubbard: I believe that it would be the primary responsibility of the municipality to take care of its own water supply situation from the standpoint of quantity. The quality of water will be the responsibility of the Committee under its Statutory authority. As to the quantity of water required by a municipality or by an industry, it would be the responsibility of the industry or municipality, whichever the case may be, to make arrangements to obtain the necessary quantity to satisfy their needs and requirements.

Mr. Daniel: As I understand your position today, you are probably here to ascertain whether or not we are satisfied with the classifications that have been recommended.

Mr. Hubbard: That's correct. Thank you very much. We also have from Weldon Mr. U. Bixby Pierce, Superintendent of the Water Department. He did not indicate that he would like to offer a statement but I would like to recognize him anyway, and if he has any comments we shall be glad to hear him. Mr. Pierce.

Mr. U. Bixby Pierce, Superintendent, Water Department, Weldon, North Carolina: I have no comments.

Mr. Hubbard: Thank you for being here, Mr. Pierce. We also have a Town Commissioner of Weldon, Mr. S. D. Brown, Jr. Mr. Brown do you have a statement to make?

Mr. S. D. Brown, Jr., Town Commissioner, Weldon, North Carolina: Thank you sir, I have no comments.

Mr. Hubbard: The next individual that I would like to introduce is Mr. B. F. Turner, Publisher of the Roanoke News, who has been most interested in the Stream Sanitation program as it relates to the fishing activities on the Roanoke River. Mr. Turner.

Mr. B. F. Turner, Publisher, The Roanoke News, Weldon, North Carolina: Thank you, Mr. Hubbard. Ladies and gentlemen, I would like to urge the adoption of these proposed classifications. From the standpoint of our community of Weldon, of course it's been said before, we get our water from the river and we also derive revenue from the rockfish industry, and we would like to have that protected, also. Weldon, as you already know, is proud of the fact of being known as the rockfish capital of the world. If the river isn't cleaned up pretty soon, I don't know what we will be the capital of, but we certainly would like to urge the adoption of these classifications. Thank you.

Mr. Hubbard: Thank you Mr. Turner. We have with us Mr. Eugene S. Edwards, Senior Sanitarian of the Halifax County Health Department and also a member of and may be an official of the Halifax Fish Club. Mr. Edwards has indicated that he has a statement that he would like to make. Mr. Edwards.

Mr. Eugene S. Edwards, Senior Sanitarian, Halifax County Health Department, Halifax, North Carolina: Mr. Chairman, members of the Committee, and ladies and gentlemen, we appreciate the opportunity to appear here today and express our views relative to your proposed classifications. In the event

that the classification "C" which you propose from Roanoke Rapids down river will do what Mr. Hubbard says it will - preserve the fish life, we will support that and support you in that classification and urge its adoption. We have seen the Roanoke River disappear from a half-way decent stream over the past few years. We have seen it being converted, gradually being converted into an open sewer, an open ditch I should say, because we have very little more water in it than a ditch at times. We have seen man's God given right to fish disappear and have that recreation. We do not believe that the municipalities or the industries or anyone should have the monopoly over a river that has occurred or now exists on our river. We feel that we should have a fair share of the river too, which has been mentioned before, and we would like to see that fair share come back, Mr. Chairman. We would like to see this river classified as "C" if that will give us at least one-half of the river that we had ten years ago. Now it has been mentioned that the classification was "E" last summer, but if you could have seen that open sewer where the decayed and dying fish, millions of them, all up and down the river with the buzzards hanging around, like we did down here, we think, it must have been less than "Z". We commend you for the effort and the trouble that you've gone to in getting this report up and thank you very much for our time.

Mr. Hubbard: Thank you, Mr. Edwards.

Senator Whitfield: I think that we can finish in about one-half to three quarters an hour, so suppose we finish rather than adjourning for lunch and coming back.

Mr. Hubbard: Dr. Sam Graham, County Health Officer of the Martin County Health Department is present and I'd like to recognize him at this time. Dr. Graham.

Dr. Sam Graham, Health Officer, Martin County Health Department, Williamston, North Carolina: Mr. Hubbard, members of the Committee, ladies and gentlemen. The remarks I have to make are in regard to one of the tributaries to the river, Welchs Creek. Now, I note that its class is Class "E" from the railroad on down to where it empties into the river. I'm afraid that the suggested classification above that point, Class "D", will not hold because the industrial waste outfall is an estimated mile above the point where the coast line railroad crosses the stream. In addition to that, there are times when Welchs Creek is a tidal stream. It's not tidal in regard to the ocean current but it is tidal as far as the wind currents are concerned. Sometimes there is a back flow of the stream that goes upstream beyond the point where the industrial waste is emptied into the stream. So I feel that if it were classified as Class "E" from the waste outfalls on down to the river that that would be a more accurate classification. Now, as far as the stream is concerned right now, it won't meet the Class "E" classification. A month or so ago, I rode up the stream with a member of your Committee and, sir, a motor boat won't ride up that stream the way it is right now. We had to shut off the outboard motor and paddle it. The stream now is purely an open septic tank from the point of the waste outfall all the way on down the river. You can see that the waste matter on the bottom is undergoing anausbic decomposition. It's forming gas and it certainly does create undesirable odors. We will be most happy to accept a classification of "E" from that point on down because I note in this report that even a Class "E" stream is a navigable stream and one which does not

have any undesirable odors or create a nuisance problem, so I'm very happy with that. We concur in the classification of the stream and wish you all good wishes and success in the classification and the enforcement of that classification for the remainder of the drainage area. Thank you.

Mr. Hubbard: Thank you, Dr. Graham. I would like to say this, it was the intention to propose Class "E" for that portion of the stream below the point of waste discharge. If the indicated class does not reach upstream as far as the point of discharge it was an error and we certainly will make an effort to correct that error. Above the point of discharge we suggested classification "D" for agricultural purposes. I believe in your statement you said that because of wind tides part of the wastes might, under wind tide conditions, be pushed upstream beyond the point of discharge. Do you think under those conditions that a "D" classification would be appropriate for those portions of Welch Creek affected by the wind tides?

Dr. Graham: No sir, I don't think so.

Mr. Hubbard: Then, could you estimate the distance above the point of discharge that the wind tide affects the stream?

Dr. Graham: I haven't been up the stream that far.

Mr. Hubbard: You would suggest that that be looked into, I presume, Dr. Graham? Thank you very much for bringing this to our attention. We have several people representing the North Carolina Pulp Company. I would like to first recognize Mr. J. A. Auchter, Vice President and General Manager. Mr. Auchter has indicated that he would like to present a statement. Mr. Auchter. Mr. Auchter indicates he would prefer that his attorney speak first, so we are glad to recognize Mr. Z. V. Norman.

Mr. Z. V. Norman, Attorney, Plymouth, North Carolina, representing North Carolina Pulp Company: Mr. Chairman, Mr. Secretary, and members of the Committee, I'm not here in the capacity of attorney, particularly. I am here for one reason. I have lived on and known the lower parts of the Roanoke River for about three score years and that connected with the desire of the company to file for your illumination a written statement in addition to these oral statements and it fell my part to prepare the statements as indicated by the officers and chemists of the company. So, I will leave with you now the original and some five or six copies so that the members of the Committee may, if they will, have the patience to read them. Now will that be enough Mr. Hubbard?

Mr. Hubbard: I believe that will be, Mr. Norman. The written statement will be reproduced and carried into the proceedings report.

Mr. Norman: Well, all right. Now, Mr. Chairman, gentlemen. We are not here to discourage in anywise the splendid work that the Committee is doing. We concur with the others that the functions of the Stream Sanitation Committee are highly important and we feel the authority conferred upon them by the Statutes, of meting out to every particular stream and segment of stream what seems to be a fair and living classification. I believe you recognize that as being the duties that devolve upon you and I believe you are trying to do it.

Now, a general Class "C" from the upper dam to the mouth of the river, we believe involves North Carolina Pulp Company to the extent where it is constrained to come before you and express its sentiments concerning a hardship that it may cause this company when we do not believe that the long history of the river, the present prevailing conditions, the geographical location, and many other elements that enter into the consideration of the east most segment of the river, will in reality and in finality satisfy you that Class "C" ought to be applied. Now, our remarks and what we have learned about this lower segment, which begins just above the plant of the North Carolina Pulp Company and extends all the way to the mouth of the river, a distance of approximately eight miles, concern this one particular eight mile segment. Now, we have heretofore, Mr. Chairman, filed with your Committee some months ago a memorandum which we believe set forth our views at that time and still does. Considerable time and patience were expended in the preparation of that document, and we believe that it contains a great deal of information which if you will read carefully, and I am sure you have already read it but read it carefully again, you will find that what we are saying today supports what's contained in that document and what is in it, we support again today. We are assuming the privilege to file with you at this moment another memorandum which contains new substance and a new approach from many respects, containing about 18 pages, which we submit for your consideration. Now, Mr. Chairman, in reading the Statute creating this program, we find in Section 143-215 the following:

"(3) The uses which have been made, are being made, or may in the future be made, of such water for transportation, domestic consumption, industrial consumption, bathing, fishing and fish culture, fire prevention, the disposal of sewage, industrial wastes and other wastes, or any other cases."

Now that is the policy of the law. It is the handwriting of the Legislature. Probably you were there, Mr. Chairman, when this act was passed. I know you've had long legislative experience. I make that preliminary statement because we justify coming within that language because of the conditions which we now begin to describe. The Secretary in reading from some of his legal phrases and pamphlets, referred to the best usage of the river. Well, all the way through the legislative act that created the Stream Sanitation Committee, this policy of "best usage" passes to the very end. That is the thing that is emphasized more than any other particular part of the whole act. It is the spirit of the act. So that "best usage" in one phase may prevail in one segment of the river and a different "best usage" may prevail in another section of the river. It's possible. You're doing it in some places. You did it on the Yadkin River. I was present there and heard the findings and informative talks, stories and comments that were being made.

Now, let's speak about what we believe is the best usage of the lower eight mile segment of the river. In the first place, there is no farm land. It lies between the plant of North Carolina Pulp Company and the Albemarle Sound. There is one place of cleared land on the right bank just below the Town of Plymouth, and only a very small acreage comes out to the water front. Except for that, the river passes through an almost impenetrable deep swamp on both sides. There isn't a spot of high land that comes out to the river shore on either side of the river from about one mile below the Town to

Albemarle Sound. It's all swamp. You can't get out of a boat and get to shore without getting your feet wet, wet to your knees and so on, all during the year. So that if there are no high lands along the lower segment of Roanoke River, as is the case where this mill is and where the Town of Plymouth is, there will be no plant sites on down below us. As a matter of fact, I had a part in trying to bring North Carolina Pulp Company into North Carolina, and I showed them the first possible plant site. I tried to keep it in my own county if it was possible to do so, but there wasn't a spot in my county on Roanoke River that was high enough for them to build their mill and so we had to go across Welch's Creek into Martin County. North Carolina Pulp Company is located in Martin County. It is not in the Town of Plymouth and pays no taxes to the Town of Plymouth.

Now the Roanoke River from time immemorial has been an artery of commerce. Before the Civil War it was a port of entry. The government maintained the customs house in Plymouth and there was a large trade between the back country and the West Indian Islands. They would load with lumber and shingles and carry it to the West Indian Islands and bring back sugar and rum. Good rum too. Now I mentioned that vessels, large sailing vessels and large steamers for freight and passengers, came into that river. I've heard my forebearers speak about it as far back as, I'd say, a hundred years ago. That river has been alive with water transportation for years and years, three or four or five generations. There are today, based in the very town itself, five powerful diesel tugs and several barges that transport wood and lumber and are engaged in moving other types of freight. I discovered in the public record not so long ago in the examination of a title that there was a large railway maintained at one time right in the Town of Plymouth. So that the use of the river commercially and industrially has been for industrial transportation. There are at present the North Carolina Pulp Company, the D. J. Brinkley Lumber Company, the Atlas Plywood Corporation, the True Temper Corporation, manufacturers of farm tool handles and one other industry on the river in the vicinity of the Town of Plymouth. They all use the river. If it were not for the transportation facilities of the river they wouldn't be there today, not a one of them. So one of the usages of the river from time immemorial has been industrial transportation.

Now, I've read to you what it says about the use of the river, what it has been, what it is now and what it will be in the future. So the past and present usage certainly must govern to a very large extent, the future use of the river. It's going to continue. It will have to continue. Now following that idea, I want to describe the physical characteristics of the stream and I lay special emphasis on this Mr. Chairman and members of the Committee, because we will treat, in another portion of our statement, the importance of these physical characteristics as not in anywise deterring or impairing fish passage through the thread of the stream on which this mill is located. I want to call your attention to the fact that as the river meanders from this area where we are now down southeastwardly and it comes to within about twelve miles of the mouth of the river, it begins to branch, and the first branch that leads from the river to the sound is to the north which is to the left going downriver. That's what's causing the thoroughfare and the thoroughfare flows into what you have Cashie. Truth about it is, it's Cashie River from Roanoke to the mouth which is now Cashie. The Cashie flows into this thoroughfare. But the point is this, the current and a great volume of the water that has come down the river to this point, sweeps

to the left going down Cashie River and into the sound. That's one of the mouths of Roanoke River. The second mouth of Roanoke River swings from the main thread of the river about a mile or a mile and a half above the plant of North Carolina Pulp Company, and it flows parallel with Cashie River and about maybe a mile from it until it reaches the Cashie. The Middle and Cashie come together at one point in the sound. That's the second mouth of Roanoke River and the third is the mouth of the main stream on which this mill is located. So that the artery for the passage of fish is not in anywise restricted to the part of the stream that passes Plymouth and the plant of the Pulp Company. Migratory fish come into these waters to spawn and they come because of the current. If there were no current passing down Roanoke River there would be no fish coming in. In the past, whenever there has been a strong current in spring months you have the best fishing and the best quantity of fish. So in these rivers, Middle River and Cashie River, which are two of the mouths of Roanoke River that I referred to, the water runs to the north and to the east which indicates that that area through which Middle River and Cashie River pass is lower than the area through which the main thread of the river passes. Therefore, being lower creates more downward current and the more current, the more attraction for the fish. That's true scientifically and it's true from observations. So I'm saying to you that a great deal of the criticism that's being made of pollution today is to why if it affects this eight mile segment, it has practically no effect on migratory fish moving up the river.

Now let me go back, if you don't mind, just a little while. The fishing industry on Albemarle Sound and Roanoke River has been good and bad in cycles through the years. Some of you may remember Capehart's Fishery on the Sound which is just a few miles from the mouth of the Roanoke. Capehart's Fishery is at the mouth of Chowan River. Now you've heard people telling fish tales and you wouldn't believe me perhaps if I tell you that I stood on the battery of that fishery many years ago and saw a hundred thousand herring and ten thousand shad rolled out there at one time. That's not a fish tale, that's a fish truth. But that was one of the times at the height of a good cycle. There was a tremendous fishery a little further up called River Run. I'm sure some of you, in reading about these things, have heard of that one. Now coming to the mouth of Roanoke River, there were four large seine fisheries in this same segment I'm talking about and there were times when they all caught plenty of fish, but in the early 1900's they began to drop off so that the one at the mouth of the river, called the lighthouse fishery, that belonged to Mr. Roy Hampton's father, just completely discontinued, and the one four miles further up the river did the same thing about 1905, 1906, or 1907. Then the other two that belonged to Mr. Hampton, he continued to operate them, hand to mouth, because the fishing business was poor. He'd have one good year and two bad years, two good years, another bad year, that's just the way it ran. It never has come back to the time that I described the time that I saw it, and that was in the 90's, in the late 90's. So that any depletion of the fish, Mr. Chairman, ladies and gentlemen, began a long time before the advent of the North Carolina Pulp Company and likewise any other industry that is now operating on the Roanoke River, and if the intent of this is to penalize industry, and I say that in the greatest manner of deference to you gentlemen, because of the depletion of fish then it is an erroneous assumption, because fish began to drop off and disappear long before any of these mills were established and I know that perfectly. That is why I'm making this statement.

Now let's see in describing the physical characteristics down there, now I tell you that the fish will come in through Cashie River and through Middle River and completely circumvent the plant of the North Carolina Pulp Company. They don't get into any of the water that is used by the Pulp Company. We had a fairly large seine fishery at Jamesville which is about 20 miles from the mouth of the river. That fishery still operates every spring. It is still catching a lot of fish, depending upon the current, weather, temperature, turbidity, and the wind. All of those things, all of vigories of nature enter into whether there are fish or no fish. Judge Rodman, who just lately ascended his seat on the Supreme Court of our State, was interested and we went up there and talked with him. He is a very intelligent fisherman, been fishing a long time, and he's studied it and followed the streams and their branches and their forks. He told us in this statement contained in the formal brief that we prepared, that he did not believe hardly any of the fish that he took in his seine at Jamesville came by filth. He's always been under the impression that they came in through Cashie River or came in through Middle River, completely bypassing, detouring the plant of North Carolina Pulp Company, the entire lower eight mile segment. So that if there's any apprehension or misapprehension about North Carolina Pulp Company destroying the rockfish or the herring seed or the shad, I think its erroneous. There is no propagation in the lower segment of the river, gentlemen. There is an abundance of fish passage, but the type of shore line and the physical characteristics of the river down there is not suitable for propagation because they, themselves, say so because they come on up in the upper reaches of the river for propagation. Now, in speaking about the fishing situation there, I want to quote from a statement made by Dr. Brandt. Dr. Brandt is at the head of the Department of Biology at State College and for 10 or 12 years has been making a study. He's interested in ichthyology and he's been studying this stream and other streams because of his particular profession and in one of his papers he makes this statement: "The collections of young-of-the-year stripers in Albemarle Sound again lend weight to the probability that spawning success in 1956 was good. Our 1955 collections of these young were reported last year as indicative of a good population of young-of-the-year. Our June and July 1956 collections indicate a greater population of young stripers in the sound than was observed in 1955. If it be true that spawning was below normal at Weldon in 1956, then it follows that other spawning areas more than made up the deficit.

"Our 1956 studies are not yet complete", now this is Dr. Brandt's statement, "neither in field work nor in analysis of results. We are, however, in position to restate our belief that:

"1. The evidence indicates a large production of eggs in the Roanoke River;

"2. The larvae are surviving satisfactorily in spite of the waste load carried by the river, and thus are refuting the contention of toxic conditions in the river;

"3. Studies in the nursery areas in Albemarle Sound refute the contention that survival of this species depends entirely upon the Weldon spawning area;

"4. Studies in the Cape Fear and Tar Rivers establish the fact that spawning runs occur in these streams."

Now in our former statement and in this statement, we are pointing out that Dr. Brandt has found spawning areas and eggs themselves of striped bass in the Cape Fear and the Tar River as well as the Roanoke. Now the question has been raised, somewhat acutely, that if there is no spawning in that segment but it's good for fish passage, how about the destruction of the fingerlings of striped bass as they go to sea? Dr. Brandt's theory of that, and I think its practical because of his study and I have been with him and seen him in casting his net bringing in the fingerlings to count and for comparisons and so forth, and he said that of the enormous number of eggs that hatched and of fingerlings that begin to grow, if there would be any destruction below the pulp mill or even above the pulp mill, it's so infinitesimally small compared with the great number that hatches it would never deplete the return of rockfish in the Roanoke River. Now that's authentic. That's from actual experimentation and natural knowledge of somebody that knows.

Now I want to make this slight observation. It takes current in any stream to keep the water good, you know that. You found that out from many of your studies. Where the water doesn't move, it becomes stagnant with loss of oxygen and destruction of fish. Fish can't live in water where the oxygen has been depleted. They'll drown. Now in order for us in the lower segment that I'm speaking about now to maintain a fair current on towards the sound that water has got to come from up here. It has for these thousand of years and it must still come. Now if the dams that are being constructed are going to hold that water back so that it stagnates, becomes impure, destroys fish, destroys everything, it's not because of the pollution of the North Carolina Pulp Company. If there is no downward pressure to take down the refuse that is always coming to the stream from the creek, then you cannot lay it to our door. There have been years, long before this mill came to Plymouth, that these stagnant sags in the river were there. I've seen them, not particularly since 1937 when the mill came, but I've seen them years before. Because in the summer months the snow all melted, there were no freshes coming down the river from up here or in Virginia and there was nothing to push that stagnant water on toward the sea. It matters not how you classify and it matters not what you require, that same condition will forever prevail and particularly so if the water reserves in the dams are unduly held back and do not take their natural course. That's something for which you cannot justly penalize this industry.

Now I want to speak briefly about the economic value Mr. Adams referred to in his statement and in doing so we do not in any way wish to discourage or disparage any other type of industry or enterprise. They all, in their place, ought to have their due consideration. We make that statement and stand behind it. Now I'm not informed on the value of the fishing enterprise. I'm not inquiring into that at all. I'm only speaking about this that's going on here, this plant at Plymouth. I presume that some of you have seen it; if not, you are welcome to come down and I'm sure the management would be glad to send a guide through the plant with you. In our former brief we made a statement about the economic value of the river that this company is producing. The tonnage, the actual freight tonnage that went out of the river during 1954, and I'm speaking about the importance of the river for industrial transportation all of which is not North Carolina Pulp Company tonnage, but by the many boats, by the many crafts that plied the river and the sound, there were moved out of Roanoke River in 1954

531,612 tons of freight that had a value of $18,167,886 and even more than that because some of it we do not have. Now we have an elaborate statement contained in here emphasizing those things but I will read to you just a few lines of what Mr. Leavitt has designated as the highlights of the industrial importance. The plant manufactures 800,000 kilowatt hours of electricity daily, approximately enough to supply Raleigh, Durham, and Asheville combined. Now that's for its own operation. Every twenty-four hours 25,000,000 gallons of water are filtered and treated, sufficient to supply the cities of Charlotte and Winston-Salem. That much water is filtered and used. 650,000 cords of wood are purchased annually and this figure has increased since then. This is the equivalent of 36,000 freight car loads and would make up a train 340 miles long, reaching from Plymouth almost to Asheville. That's annually, clear across the State. Each cord of wood weighs about 5,000 pounds and is composed of 2,600 pounds of wood fiber, 2,100 pounds of liquid, 249 pounds of sugars and starches, 45 pounds of resins and oils, and 8 pounds of turpentine. All of these are by-products except the wood fibers. Now from 1938, when the Plymouth plant was started, through 1955 the company spent over $182,000,000 for materials and labor. Staggering figures. In 1956 alone over $27,000,000 was spent. Among individual items of 1956, pulpwood cost $11,900,000, chemicals cost $3,700,000, fuel cost $2,700,000, miscellaneous supplies $11,800,000, wages and salaries $5,700,000.

Now I mentioned that so you will have an idea of the economic value of these manufacturing plants. And I wouldn't have brought it up if the Legislature hadn't brought it up. It's in the Statute itself where industry and all of these diversified enterprises must have their due place and due consideration. Why, it was just a few nights ago when I was listening on television and here came the Governor making a tremendous appeal for more industry and "considering everything equal, bring in all the industry you can." And we have quoted from that speech in this memorandum.

Now I'm sorry that I have taken more time than you may think I ought to have had but this is a matter of considerable importance to us. We cannot operate under Class "C". It would be economically unsound and impractical and we cannot find any justifiable reason, in all deference to you ladies and gentlemen, why this segment of the river should be retained in Class "C". It's always been an industrial artery. The fish have always come, they still come and I failed to emphasize that some of the years in the 1940's were some of the best fishing years in the past 20, and that was after the mill came here. So when nature provides the fish come in, pulp mill or no pulp mill. I appreciate the time you have given me and if you will permit me to do so, I would like to yield now to Mr. Auchter and Mr. Leavitt who would like to make a short statement.

Mr. Hubbard: Thank you Mr. Norman. Mr. Auchter, we are glad to recognize you.

Mr. J. A. Auchter, Vice President and General Manager, North Carolina Pulp Company, Plymouth, North Carolina: My name is J. A. Auchter, Vice President and General Manager of the North Carolina Pulp Company. I want to endorse everything that Mr. Norman has said. We in our business need plenty of good water in order to make the sanitary food board which we manufacture in our plant at Plymouth. Board which in turn is made into paper milk cartons to carry fresh milk to the homes for children and babies. We appreciate that good water is necessary. I think the brief that you have

will outline to you and give you information as to the great length at which we have gone in order to provide the various facilities which are required to carry on our business.

Now we highly concur with everything Governor Hodges recently said on the radio. We believe and we are convinced that North Carolina needs more industry in order to stay in pace with the things that are going on. North Carolina is falling behind the parade. Inducements are being made by other States which are much more attractive than North Carolina offers. I know whereof I speak because our particular industry covers the entire packaging field. Every article that goes on the market is packaged, so we know the operators of businesses of all types and many of them talk to us and ask "How is the climate in North Carolina, how are the boys treating you down there."? We, of course, have to tell them the facts. Just this morning I saw in the paper that a Committee representing the eastern counties of North Carolina met at Aulander and announced there would be 5,000 unemployed families due to the cut back on tobacco. Again we need more industry; we need the kind of industry that the North Carolina Pulp Company is. Ever since we have been here, from the day we first opened our mill, we have given continuous and full employment to every employee in the mill. We have paid them the highest average hourly rate and the highest average weekly pay, according to your North Carolina Labor Statistics, of any industry in the State of North Carolina. So we are the kind of industry you should want.

Now during this time of talk about our river and the water and so forth, the thing that impressed me most of all was that so many statements are made by so many people which must be taken out of the air somewhere or are illusions. I do know that a little phrase that has guided me through most of my life is "things are not always as they appear to be". Appearances are sometimes deceptive. I have found in my own business life that that was the most important phrase. In our own business we make investigations and do research to get to the bottom of the things to develop the type of business that we have. Now in the fishing industry many statements are made which I think could very well consider things are not always as they appear to be. Appearances are sometimes deceptive. These men who make these statements about fishing, although they may do so in full honesty and integrity, but we believe in finding the facts, we've got to find the facts, that's how industry grows and develops and we grow through research. Now in line with that, we were foremost in suggesting that a further study be made of this river about three years ago. The National Council for Stream Improvements, of which we are contributor, was willing to finance the program. Various agencies including the Stream Council, the Wildlife Resources Commission, etc., all accepted the particular recommendations made by Dr. Van Horne, who is one of the foremost men in this line, and Dr. Brandt was selected as the man to make the study. He has studied this river with his organization and with his men for the past two years. This is Dr. Brandt of North Carolina State College. That program originally was supposed to take five years. I heard a three year statement this morning. My impression, my information was that five years would be a minimum; in fact I have a letter from Dr. Van Horne, making that particular statement.

Now, you cannot in fairness and I'm sure you don't want to do something unfair to our industry which has been such an enormous value to eastern North Carolina. I'm convinced that it has been the largest economic

value of anybody in eastern North Carolina. Now I'm sure you don't want to do an injustive to our company nor do you want to do an injustice to the State of North Carolina, because the manner in which you treat us is the manner in which some other people are going to look at the situation, without having all the facts. Therefore, I think that you should follow the same thing that we do in our research, get all the facts, complete this study of Dr. Brandt's. In fact, Dr. Brandt has just made a new recommendation. As Mr. Norman stated, the Roanoke River has three mouths. One of them comes by our mill. Dr. Brandt is now suggesting that a study be made this year to see which way the migratory fish go up the river. Plenty of them do go up. We are willing, our company is willing to undertake to finance that study either directly or in another manner but we will see that that study is made. Now we don't think that in fairness you can classify this river along with your recommendations you have suggested without having all of these facts. This latest suggestion of Dr. Brandt's also ties into it. So I want to leave with you merely this, that we cannot live with a Class "C" and we think that you ought to put the "E" Classification on that river. With an "E" Classification, any of the objections that are raised by the Martin County Health Officer, etc., will be taken care of too. Thank you.

Mr. Hubbard: Thank you Mr. Auchter. We will now recognize Mr. E. M. Leavitt, who is the Mill Manager of North Carolina Pulp Company of Plymouth. Mr. Leavitt.

Mr. E. M. Leavitt, Mill Manager, North Carolina Pulp Company, Plymouth, North Carolina: All of you heard my name so I don't have to repeat that at this time. My job is to run the mill and to meet the conditions we have to meet in relation to our being a good neighbor, and being a good citizen to our community. My job is a technical job. It isn't public relations or something like that but it's a job to see that what we talk about is true, because if we don't know what's true to start with we can't come to sound conclusions in the end. Therefore, we would like to present this little more extension of the picture about the conditions in the river from Plymouth or from the Pulp Mill down to the Sound which is roughly eight or nine miles.

With this three mile situation that has been discussed, when you have an east wind or a northeast wind, you get a stagnant condition in that branch of the river. And if you take a boat, as many of us have around there, and go up to where the full flow goes into the Cashie or up the Middle River, you'll notice a tremendous increase in the rate of flow through those two other mouths of the river during the period when there is an east wind. Now the reason for that is, if you look at a map you'll see that the Roanoke is the widest and straightest branch for an east wind to shove the water back and produce a wind tide. Those conditions have been observed to exist for a period of ten days at a time, and if such conditions occur in the summer months when it's warm and when the rate of oxygen depletion is faster you will get zero oxygen in the river even if the Pulp Mill is shut down. I might even say that in checking back with Mr. Norman and some of the people who have lived in that area all their lives that before 1914 when the Town of Plymouth first put its sewage into the river, there were times during the summer months when strong east winds prevailed that the oxygen apparently fell so low that you had fish dying in that stagnant part of the river, and of course that condition does still exist. Now if you have a condition that way that is caused by nature and obviously if the fish are dying you know

the oxygen certainly is way down to 1 or 2 ppm and some studies we have made show that there are times the oxygen has gone as low as zero. Now if you have that condition, irrespective of the pollution load of the Pulp Mill and there is some because industry has to have some place to put some of its wastes, it's entitled to some, the same as the City has to have some place to put its waste, even without those loads it has been demonstrated by the fact that even before the industry was located there in 1938 and before the City discharged its sewage into the river you still had periods of fish dying in that zone of the river. So we had the oxygen content way down below Class "C" specifications. Now even if we were to spend much more money than it would be economically sensible to spend, trying to be a good citizen and spending more than we should and if we treated our wastes and if the Town of Plymouth treated its sewage sufficient to reduce the B.O.D. by even 70%, which is a lot more, by the way, than you asked in some of your previous work where you've indicated that if the load was reduced by 50% it would probably be satisfactory during these periods, it would be impossible to meet Class "C" specifications. I'm only a factual kind of guy, I can only look at the figures, I'm not much on dressing something up, but it certainly looks to me that if it's impossible to meet a condition, it certainly is wrong to set up a specification which you know before hand you can't meet. However, fortunately in this whole situation it does seem to me that we aren't at an impasse necessarily, because you do have these other two mouths of the river which help out in this situation. The evidences that we have from a very careful scientific study that's been mentioned, and more work will be done on it, is that as far as that segment of the river is concerned, fishing has not been hurt and we've got definite information of that and that is presented quite fully in the more detail breifs that have been filed. Well, if you don't hurt the fishing, why penalize us with trying to meet a situation which we know ahead of time that we can't meet. That briefly, friends, is the way the picture looks to us. Thank you.

Mr. Hubbard: Thank you, Mr. Leavitt. We have another member of the delegation from the North Carolina Pulp Company. Mr. Frank Brinkley. I don't believe that Mr. Brinkley indicated he wished to make a statement but I'd like to recognize him. We are glad to have you with us, Frank. I would now like to recognize Mr. Fletcher H. Gregory who indicates that he's a private individual from Halifax, North Carolina, and has asked permission to make a statement. Mr. Gregory. Has Mr. Gregory already gone? We also have with us this morning, if he hasn't left the room, Mr. F. W. Reams, who is County Farm Agent of Warren County, Warrenton, North Carolina. Mr. Reams would you like to make a statement?

Mr. F. W. Reams, County Farm Agent, Warren County, Box 706, Warrenton, North Carolina: Mr. Chairman, members of the Committee, and ladies and gentlemen. Looking over that portion of the territory going through Warren County, I can say I highly approve that and appreciate the complications of that portion of the river going through Warren County.

Mr. Hubbard: Thank you, Mr. Reams. We have a few other people whom I would like to recognize. One of those is Mr. Herbert F. Berger who is Resident Engineer with the National Council for Stream Improvement, Blacksburg, Virginia. Mr. Berger, do you care to make a statement?

Mr. Herbert F. Berger, Resident Engineer, National Council for Stream Improvement, Blacksburg, Virginia: Not at this time, but thank you anyway Mr. Hubbard.

Mr. Hubbard: Thank you, Mr. Berger. We also have Dr. M. L. Taylor, who is Technical Director of the Union Bag-Camp Paper Corporation, New York City. Dr. Taylor if you would like to make a statement we'd be glad to hear from you.

Dr. M. L. Taylor, Technical Director, Union Bag-Camp Paper Corporation, New York City, New York: Thank you, Mr. Hubbard. I do not have a statement. I'm glad to be here.

Mr. Hubbard: We're glad to have you with us, Dr. Taylor. We have Mr. Carl Churchill who is a news reporter representing the Roanoke Rapids Daily Herald and the Associated Press. Mr. Churchill would you like to offer a statement? We also have with us Mr. W. Henry Overman, Superintendent of Schools of Halifax County. We are glad to have you with us Mr. Overman and we'd be glad to hear from you if you have a statement to make. (Mr. Overman had already left the meeting.) We have the Public Health Officer of Bertie County with us, Dr. W. S. Cann. Dr. Cann, would you like to make a statement?

Dr. W. S. Cann, Public Health Officer, Bertie County, Windsor, North Carolina: I have no statement.

Mr. Hubbard: We appreciate your coming to the hearing, Dr. Cann. I believe that that covers all of those who have indicated that they would like to offer a statement. However, if there are others who would like to offer a statement at this time, we'll be glad to hear from them. Is there anyone else who would like to speak? Senator Owens.

Senator Owens: I want to ask you a question, but to explain why I ask it and its nature, I think it's best for me to go into it this way. While we were attending an Appropriations Committee Meeting former Senator Charles Jenkins of Aulander, who is on the Board of Conservation and Development, called my attention to an appropriation for a survey of Roanoke River and Albemarle Sound to determine if the Buggs Island Dam and the other dams which have been built since were holding up water to the extent that brackish water was flowing upstream. Back flow does occur to the extent that we have sea crabs as far as our town docks at Plymouth and I don't know how much further up they come. There have been instances in which croaker have been caught, which is a salt water fish that never had been caught in the Albemarle Sound before. At times they are quite plentiful. Anyway, this appropriation called for a survey to investigate the reasons for the salt water intrusion. Now, bearing industry in mind we've got to think about timber. You know what salt water will do to timber up and down the marshes and timberlands around Roanoke River. At the same time, since these dams we've had no flushes like we used to have and they have preserved and made dependable land, timber lands from Weldon on down. Now, in this 8 mile area this salt water quite frequently comes up this segment Judge Norman was talking about. I don't know how much further up it's coming. What has been done about that survey? Is that in your study along with the pollution problem? If it is, isn't this, in a way, another form of pollution that would affect industry as well as our timberland rights.

Mr. Hubbard: Senator, is that survey being made by the Corps of Engineers or by a State Agency?

Senator Owens: It probably has been done. I haven't heard anything more about it. The appropriation calls for 25 or 30 thousand dollars.

Mr. Hubbard: I do not know the status of the survey which you mentioned.

Senator Owens: I took for granted that the Department of Conservation and Development was the one requesting an appropriation for that purpose.

Senator Whitfield: Colonel Snow, do you know what's underway?

Mr. Snow: I did not know that an appropriation was made. I do know that the Department of Conservation and Development, the Department of Agriculture, and the State Stream Sanitation Committee did provide from each of their funds money for a salt water intrusion survey. We've made some surveys on the Cape Fear and the Neuse but to my knowledge none have been made on the Roanoke to date.

Mr. Hubbard: We also have with us Mr. Walter W. Harper who represents the North Carolina Department of Conservation and Development, particularly the Division of Commerce and Industry. Mr. Harper, do you have any comments you'd like to offer?

Mr. Walter W. Harper, Development Engineer, North Carolina Department of Conservation and Development, Raleigh, North Carolina: I have no comments, Mr. Hubbard.

Mr. Hubbard: That completes those that have indicated they desire to be heard. If there are others, we will be glad to hear them.

Mr. W. E. Whitley, Dog Warden, Halifax, North Carolina: I would like to ask a question, sir.

Mr. Hubbard: Yes sir.

Mr. Whitley: I am W. E. Whitley from Halifax and I would like these gentlemen of the North Carolina Pulp Company who have told about how much money they've paid out to let us know about how much they've taken in. They say it's all been going out and none coming in.

Mr. Auchter: I'll be glad to answer that question. I don't know of any successful business that can have all outgo and no income, I also don't know of anyone who's ever held a good job that wasn't with a successful industry. I also don't know of any community that's been prosperous if it did not have successful industries in the community and that holds good for the local town, State and nation. Unless we have prosperous industry these men who think they are going to fish just will not have time to fish. It's a question of what you want.

Senator Whitfield: Senator Owens, we didn't answer your question satisfactorily, except from the standpoint of certain facts. We will look into that and write you.

Senator Owens: I wish, sir, that you would investigate this question and see what is being done about it.

Senator Whitfield: Col. Snow, you say that studies have been made on the Cape Fear and the Neuse?

Colonel Snow: There has been an expenditure on the Cape Fear and the Neuse. Whether or not there's been expenditure on the Roanoke I don't know.

Senator Whitfield: We'll check on it Senator and let you know.

Colonel Snow: It is not an appropriation. We use budgeted funds from these State Agencies that I mentioned.

Senator Whitfield: Now ladies and gentlemen, we have been long here and we are happy to have been here to hear everything everyone has to say. We shall study our recommendations in the light of everything that has been said. As I said previously, all classifications in the report are tentative.

Mr. Edwards: Mr. Chairman, you called on Mr. Fletcher Gregory earlier. He is here now.

Senator Whitfield: Mr. Gregory, would you like to say something?

Mr. Fletcher H. Gregory, Private Individual, Halifax, North Carolina: Mr. Chairman, I'm Fletcher Gregory from Halifax, been living here all my life. I'm interested in the fishing part of this problem that we have before us here today, especially from the standpoint of the rock fishing from Weldon down to Halifax and maybe four or five miles below Halifax. Rock fish, for some reason known to themselves, maybe not known to us, have selected Roanoke River from Weldon down to Halifax to do their spawning and every year these fish have been coming up here in thousands and tens of thousands and maybe millions to spawn and the fishermen from all around this area here from Little Washington, Wilson, Rocky Mount, and Warrenton come here to fish. I'll say that a thousand or two thousand of them maybe come here to fish. Well, maybe that is a very small part of it, the recreation that they have from their fishing. These fish, when they spawn, thousands of them and millions of them find their way back down to the ocean, down to Chesapeake Bay. I saw in the paper sometime ago where some boy had caught so many tons of rock fish out of Chesapeake Bay. No doubt they were hatched right here in our Roanoke River. Now the gentleman here from Warren County says that our fishing business has been ruined. Well, I agree with him entirely. When I was a boy, well before I get to that, I will tell you about shad. We used to catch shad in the Roanoke River here. Shad has a little mouth about that big and he's quit coming up here altogether. I take it that maybe a shad has got sense enough to know that he can't swallow this stuff that's coming down the Roanoke River and he's quit coming so we don't catch any of them. When I was a boy we could take a net and go down there in the evenings and catch a boat load of shad. But they've quit coming and we don't catch any. I started fishing in the Roanoke River just for recreation when I was a boy about fourteen years old and fished on there ever since up to two or three years ago until the condition of the Roanoke River got so bad it wasn't fit for a man to fish in and you know it wasn't fit for a fish to live in. I notice on your chart here that you've got A, B, C, D, and E, and C is suitable for fishing so I understand. I'd like to ask Mr. Hubbard what condition the Roanoke River is in right now. What condition would you put it in, A, or E, or D?

Mr. Hubbard: Mr. Gregory. . . . . .

Mr. Gregory: I know you are not going to answer it, so I'll answer it [illegible] experience I had down here a year or two ago. I got the idea that I wanted to try an experiment with sweet potatoes and I put a little irrigation plant down there to get the water out of the Roanoke River and the water chocked my sprayers up so bad that I thought I would get ahead of it and I put a screen wire around my nozzle there in the river [illegible] Well, in less than a half an hour that nozzle was clogged up just like that, solid, and the water wouldn't come in at all so that didn't work a bit. That's how bad it is. It's in "E" or below "E". If there is anything below "E", it's below an "F". I'm pretty sure Mr. Hubbard wouldn't tell us out here, we talk around like we did there just now, but he's not going to tell us. It's an "E" or below an "E" right now and if fish won't live in it and it's not fit for people to fish in, it's not fit for fish to live in. Thank you, sir.

Mr. Kilian: (Did not come to microphone)

Senator Whitfield: Ladies and gentlemen, we enjoyed being here with you. We will assign the permanent classifications within about 30 to 60 days. All classifications listed in the report, as we stated in the beginning, are tentative. We have to hold these hearings for the purpose of hearing your recommendations and then consider both sides of every question before the final classifications are assigned. We will make those decisions at the proper time. I would now like to give the members of the Committee a chance to say anything they wish to say. Do you have anything to say, Colonel Snow?

Colonel Snow: Mr. Chairman, members of the Committee, ladies and gentlemen. It's been a pleasure and a privilege for me during the past 2½ years to serve as a non-voting, ex officio member of the State Stream Sanitation Committee. I think it's one of the most important duties of my position as head of the Division of Water Resources of the Department of Conservation and Development. This Department wants to do everything it can to conserve and develop the water resources of North Carolina. It wants to do everything practicable to locate new industries in North Carolina and to assist existing industries in expanding their operations. We have many problems connected with the lower Roanoke River. I know of no river in the United States that has more complex problems. I believe that the Committee is doing an excellent job and I think that the action taken pursuant to decisions of the Committee and recommendations of the Steering Committee for Roanoke River Studies will go a long way toward solving the problems of providing water of adequate quantity and quality in the lower Roanoke River.

Senator Whitfield: Mrs. Bishopric, our Vice-Chairman, do you have any comments?

Mrs. Karl Bishopric, Vice-Chairman, State Stream Sanitation Committee, Spray, North Carolina: I'm very glad to be here but I don't have anything to say.

Senator Whitfield: Mr. Vann.

Mr. J. N. Vann, Member, State Stream Sanitation Committee, Ahoskie, North Carolina: Mr. Chairman, I don't have anything to say. I listened to the statements made during this public hearing today in which I am tremendously interested. This meeting has presented, as I see it, three separate and distinct lines of thought. One line of thought is that we must have more light. The second one is we must have more industry. And the third, we must have more sports. I'm with you all. I know the future of North Carolina depends largely on its industry. I know the future of North Carolina depends on its health. I know that where you have the industry and people to work you must afford them opportunities for recreation. Regarding this problem here today, if I were a member of a jury it would take a whole lot of deliberation and a whole lot of praying to reach a conclusion on this matter that would be satisfactory to Joe Vann regardless of how it may affect you. We want to be honest with you and we are going to be honest with you, all of you, in our feeble way. This Committee believes in being fair. We believe in giving to every body that to which he is entitled and doing to others what the law of God, the law of man, and the law of common sense says he has a right to be entitled to.

Senator Whitfield: Thank you, Mr. Vann, Mr. Farthing.

Mr. H. Grady Farthing, Member, State Stream Sanitation Committee, Boone, North Carolina: As has been indicated before, I'm on the Committee to represent the wildlife interests of the State. I have spent the most of my life in that service, in protection of fish and game, and to our friends back here we just wish you more luck. It's been my good pleasure to have the privilege of going into almost every section of North Carolina in the interest of fish and game. I think this has been one of the most educational meetings that we've had the pleasure of attending and as Mr. Vann has said it deserves a lot of study. If we can take an intelligent approach to this, I'm sure that a satisfactory solution can be worked out for the whole thing. Thank you.

Senator Whitfield: This morning I stated that one of our members couldn't get here. He was marooned in Raleigh, but he skated all the way from Raleigh to be here at this meeting. Mr. Clark, we would be glad to hear from you.

Mr. Walter Clark, Member, State Stream Sanitation Committee, Lincolnton, North Carolina: I have no comment to make except that it has been a pleasure being here. I think probably everyone had rather have lunch than to hear anything much from me.

Senator Whitfield: Now is there anyone who wants to say anything? We don't want anyone to go away from here without being given a chance to say whatever they want to say.

Mrs. Bishopric: Mr. Chairman, I didn't think I had any comments but there is one thing I'd like to say. I am intensely interested in the textile industry and I have been intensely interested in what Mr. Norman had to say about all of the things the North Carolina Pulp Company has done for us. One thing that he didn't say that is in his brief and that struck me very forcefully and gives you an idea of what these industries do mean to us, yet how industries feel about all of the problems that Mr. Vann presented to us so concrete and so ably, he left out. He said in a year enough milk carton board is produced to bottle milk, which, if placed in

quart cartons side by side would reach for 113,150 miles, or approximately one-half way to the moon. Is he right in saying side by side or is it end to end?

Mr. Norman: I didn't write it, but either way it is a lot of space.

Senator Whitfield: Well, we've had our speeches. We've been happy to be here with you. We've heard your comments and we will make our decisions. May I call your attention to the fact that duty is a sublime word. The old adage that says it is the most sublime word in the English language, but I've learned down the years, there's a word even more important than "duty", that word is "courage". The State Stream Sanitation Committee is going to be fair. It has the courage to be fair and we are going to be fair to you and to the State of North Carolina. The hearing is now adjourned.

(The meeting adjourned at 2:30 P. M.)

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The following letters, briefs and affidavits were received by the Executive Secretary concerning the public hearing held at Halifax, North Carolina:

BRIEF AND STATEMENT OF NORTH CAROLINA PULP COMPANY CONCERNING THE CLASSIFICATION OF THE SEGMENT OF ROANOKE RIVER THAT LIES BETWEEN THE MANUFACTURING PLANT OF NORTH CAROLINA PULP COMPANY AND THE MOUTH OF SAID RIVER.

North Carolina Pulp Company has heretofore filed with the State Stream Sanitation Committee a memorandum stating its views and containing authentic information which we believe to be highly pertinent and ought to be given full consideration by the Committee in arriving at a classification for this segment of Roanoke River. We presume that the personnel of the Committee has examined this memorandum, but we beg leave to bring this to your attention again and ask that it be reconsidered and read with the memorandum that is now being presented. It is our purpose to bring to the Committee our views and facts that we believe would justify the Committee in classifying this segment of the river according to its best usages.

BEST USAGES

The Committee, in the Report No. 4 of the Survey of the Roanoke River Basin of 1956, recommends Class C, for that part of the river from Roanoke Rapids Dam to the mouth. Because of varying natural conditions prevailing in the many segments of the river from the said dam to its mouth, we respectfully recommend to the Committee that as to the lower segment under discussion this classification is erroneous, and we believe that the present factual situation does not support this classification.

We quote from Section 143-215 of the General Statutes of North Carolina under the heading "Criteria for Assignment of Classifications," the following requirement:

"(3) The uses which have been made, are being made, or may in the future be made, of such water for transportation, domestic consumption, industrial consumption, bathing, fishing and fish culture, fire prevention, the disposal of sewage, industrial wastes and other wastes, or any other uses."

It is the policy of the law to classify all streams according to their best usage. This means the classification should represent the most advantageous use of which the stream is capable, and the Committee seems to recommend Class C as the best usage of this segment of the river and has found the best usage to be "fishing". The Committee seems to have disregarded or overlooked the physical conditions and environment of this lower segment as described in our former memorandum. We discuss first its physical character.

PHYSICAL CHARACTER

This segment of the river, after it passes the Town of Plymouth, meanders for a distance of about six miles through swampland to the mouth of the river on which water stands at all times. The elevation is too low for agricultural purposes and there is no demand for the use of its water for irrigation. The water is deep and the channel will average more than 400 feet in width. The bar at the mouth of the river has been dredged to

a 12 foot channel. Prior to 1937 the depth at the bar was 8 feet, but because of navigation necessary to industry and transportation the War Department dredged a new channel to a depth of 12 feet. The current, prior to the construction of the Kerr Dam at Roanoke Rapids, depended upon the melting snows and rains at the source of the river, which is in the mountains of Virginia.

Roanoke River, in fact, has three mouths. As the river passes Plymouth, it is called "Roanoke" all the way to the Sound. The second mouth of the river is a branch that originates from the north side of the river about ten miles from the Sound and extends Eastwardly to the Sound parallel with Roanoke and about one-half mile from same. This stream is navigable and is called "Middle River". The third mouth is a branch originating at the north side of the river about twelve miles from the Sound and extends Eastwardly about one mile north of Middle River. The origin of the branch is called the "Upper Thoroughfare", which empties into Cashie River which flows into the Sound. This stream is navigable and the three mouths as they enter the Sound are relatively close together. Therefore, it may be easily and readily understood why the lower eight mile segment of the river may be classified differently from the balance of the upper part of the river as far northwest as Roanoke Rapids.

On the lower segment of the river, there are the industrial plants of North Carolina Pulp Company, American Cyanamid Company, True Temper Corporation, D. J. Brinkley Lumber Company and Atlas Plywood Corporation. Because of the navigability of the stream affording ample transportation facilities, deep water and safe harbor, industry recognizes that the main use of the river is for industrial purposes. If there were other plant sites between North Carolina Pulp Company and the mouth of the river of sufficient elevation as to not being subject to overflow, there would be more industrial plants located along the river. Even opposite the Town of Plymouth and the entire distance from the Pulp Company to the mouth of the river, there is an impenetrable deep swamp where no plant sites are available. According to tradition and the public records of Washington County, there have been large lumber mills and shingle mills on most of the present sites of the foregoing industries and Marine Railways even before the Civil War.

INDUSTRIAL TRANSPORTATION

For more than a century this segment of the river has been an artery of water transportation. Larger lumber barges, steamers, sailing vessels and other types of craft plied the lower Roanoke for industrial purposes in bringing freight to the Town of Plymouth, which was established about 1790. Upon the advent of two railroads coming into Plymouth, some of the freight steamers were removed, but transportation of raw material and manufactured products has continued on the river to this day and is destined to further expansion. During the Civil War, prior and subsequent thereto, the Town of Plymouth was a Port of Entry, and the United States Government maintained at Plymouth a Customs House. At present, there are five diesel tugs based at Plymouth, all of which are doing industrial towing. Great quantities of logs and pulpwood are moved by barge to the manufacturing plants at Plymouth. A very large tonnage of freight goes

out of Roanoke River to Northern markets. Therefore, it will be observed that one of the best usages of this segment of the river, for a century or more, has been for industrial purposes.

FISHING AND FISH SURVIVAL

For time immemorial the upper reaches of Roanoke River have been highly suitable for fish propagation. In Lawson's Early History of The Carolinas, he describes how the Indians took great quantities of herring and had a method of drying and preserving these fish as a food commodity. There were large seine fisheries on Albemarle Sound in the 80's and 90's. As late as 1903 or 1904, there were four seine fisheries in this segment of Roanoke River. They were operated in the spring months only when there was a great influx of shad, herring and rock in Albemarle Sound, Chowan and Roanoke Rivers, particularly the Roanoke. It is a matter of tradition and history that the fishing industry thrived in cycles of good years and suffered losses in poor years.

This industry on Roanoke River began to decline in the early 1900's, so that four or more of the large seine fisheries near the Sound were abandoned and only two survived until the late 1930's, and even then the operators of these two fisheries suffered considerable losses hoping for a better season. These two fisheries were operated in a hand-to-mouth manner several years before the establishment of the pulp and paper industry on the river in this lower segment. The cause of the lack of migratory fish coming into the sound and river has been studied by many scientists, but has not, in reality, been discovered. Some people said it was because of weather, others said temperature, others said turbidity. Many of the old fishermen attributed the lack of fish to the filling up of the inlets along the outer banks. Perhaps, this was one of the most reasonable conclusions, for that in great storms inlets have been filled, partially filled and closed, and at times new small inlets cut through the banks, which were easily closed by subsequent storms.

However, since the beginning of the operation of North Carolina Pulp Company on this segment of the river in 1937, there have been many good seasons of fishing and many bad seasons of fishing in the migratory months. North Carolina Pulp Company has conducted many experiments and made many observations during this period and they show that since the Pulp Mill has been at Plymouth there have been seasons of good fishing that were comparable to the good seasons from about 1904 to 1937. Some of the fishermen operating small drift nets took quantities of herring in the river abreast of and below the pulp mill in the 1940's. Reference is made to the statements of fishermen contained in the former memorandum submitted by North Carolina Pulp Company. Many people say that the fish are still coming in but it is not economically profitable because of better wages in industry and even in agriculture. There are current seasons when there seems to be an abundance of fish in the spring months in this segment of the river. Therefore, it is a fact that the fish are still coming and passing through the lower segment of the river notwithstanding the alleged destruction of the fish by pollution.

Scientific observations and experiments by North Carolina Pulp Company lead to the conclusion that the migratory fishing industry in this segment

of the river is as good now as it was before the advent of the pulp mill and that the slump of the industry in other areas is not because of pulp mill pollution but is a coincident of the times.

We emphasize the presence of shad, rock and herring in the spring months in the lower segment of the river in large quantities which leads to the further conclusion that this segment is safe for the passage and survival of fish as they make their way to the upper reaches of the river where there is an abundance of favorable spawning grounds. In the migratory months, there are several runs of fish. The presence of migratory fish in any particular area or segment is not constant. There is practically no commercial fishing in this segment of the river because it is unlawful to set nets and pound net stakes that are an obstruction to navigation. The setting of nets and their attachment to stakes has been prohibited in this segment more than fifty years. There is no sport fishing in this segment, but at the mouth of the river there is successful sport fishing for striped bass. There is also successful sport fishing on Middle River and Cashie River, which are two of the tributaries constituing the second and third mouths of Roanoke River. There is an abundance of fish survival and fish passage up these other two lower branches of the river as well as through the thread of the river that passes the pulp mill.

There is a commercial seine fishery on this river at Jamesville, which is eleven miles about Plymouth. It operates each spring and its success in good and bad fishing years is the same as in other fishing areas. The operator of this fishery believes that the main source of his supply comes through Cashie River and Middle River, for the reason that the sweep of the current toward the sound in these two rivers seems to be more rapid than the lower segment of the Roanoke. It is generally known that it is the downward current that attracts the fish. The Jamesville Fishery is still in operation each spring.

A great deal is being said about the destruction of rock fish because of pollution in the river. We have a bulletin issued by Dr. B. B. Brandt of the Department of Biology of North Carolina State College, November, 1956, in which he states that the 1956 young-of-the-year population in Albemarle Sound appears to be much larger than that of 1955. Dr. Brandt also makes the following statement:

"The collections of young-of-the-year stripers in Albemarle Sound again lend weight to the probability that spawning success in 1956 was good. Our 1955 collections of these young were reported last year as indicative of a good population of young-of-the-year. Our June and July 1956 collections indicate a greater population of young stripers in the sound than was observed in 1955. If it be true that spawning was below normal at Weldon in 1956, then it follows that other spawning areas more than made up the deficit.

"Our 1956 studies are not yet complete, neither in field work nor in analysis of results. We are, however, in position to restate our belief that:

"1. The evidence indicates a large production of eggs in the Roanoke River;

"2. The larvae are surviving satisfactorily in spite of the waste load carried by the river, and thus, are refuting the contention of toxic conditions in the river;

"3. Studies in the nursery areas in Albemarle Sound refute the contention that survival of this species depends entirely upon the Weldon spawning area;

"4. Studies in the Cape Fear and Tar Rivers establish the fact that spawning runs occuer in these streams."

Dr. Brandt also states that he found rock eggs in the Tar River indicating that there is spawning of rock fish in Roanoke, Cape Fear and Tar Rivers, and that the presumption that the area around Weldon is the only spawning ground of rock fish is erroneous.

Dr. Brandt is of the opinion that because of the vast number of eggs that are hatched, if there be any destruction in this segment of the river of the fingerlings as they make their way toward the sea, it is almost nil compared with the tremendous number that survives. He does not believe that any fingerlings that may die passing through this segment will ever decrease the normal rock fish population in Roanoke River.

EFFECT OF KERR DAM RESERVOIR

We are impressed that the alarm over rock fish depletion did not arise until after the completion of Kerr Dam and water releases were established. The oxygen content of the water is about zero at the point of release. If this condition of the river at Roanoke Rapids is contributing to the destruction of rock, heavy requirements ought not to be made on industry to compensate for the damage arising at the dam. The Statute requires the Committee to take into account the previous conditions of the stream. If there be any destruction because of pollution, all of the experimentation and investigation by North Carolina Pulp Company does not establish impairment of the eggs or fingerlings in the lower segment of the river that can be the basis for any alarm or apprehension. There has always been mortality even in the spawning grounds, and this is a natural condition in the waters of any stream, whether it carries industrial waste or not.

ECONOMIC VALUE

We discussed the economic value of industry in the lower segment of Roanoke River in our former memorandum filed with the Committee. We believe that the spirit of the Act creating the Stream Sanitation Committee requires due consideration to the value of industry on those streams where there may be other enterprises.

North Carolina has been extremely fortunate for many years in attracting and causing to be established within its borders a large amount of industries of which we are proud. Determined efforts are still being made to bring in new industries. We are certain that the Committee is endeavoring to be fair to all business enterprises, but extreme caution is suggested to avoid discouragement of prospective industry coming into the

State. We quote from an address by the Governor of North Carolina made November 29, 1956, wherein he said:

"There are probably many things we need to do to improve our economy, and one of the most important of these is to increase our industrial growth. Through the expansion of our existing industries, through the creation of more locally owned industries, and through the attraction of additional and diversified industries from the outside we can provide the employment and income we must have to take care of our growing State. And, above all, we must spread this industrial growth throughout the State so as to include areas in which our farm economy simply cannot profitably make use of the increasing surplus labor force looking for work."

In the Report of the Committee on Roanoke River Basin 1956, Page 32, it is stated: "It has been estimated that the economic value of the striped bass exceeds $1,000,000." It is not disputed that the striped bass propagation in the river should be preserved, but not at an enormous expense to industry. We submit that the manner of the operation of North Carolina Pulp Company, where every possible refinement and precaution is taken to prevent damage to the fish population, ought to be taken into account and given very careful consideration looking toward its protection and preservation, and that the manner of the operation of the fishing industry and privileges of sport fishermen also should be examined to ascertain what voluntary activities they are doing and what the public authorities of the State are doing to preserve the commercial and sport fishing survival.

Just how migratory fish, including striped bass, ever find their way into the sound and around and through an elaborate system of nets, many of which are in the navigable areas of Albemarle Sound and Roanoke River, is a mystery. Albemarle Sound is so studed with net stakes it has become dangerous for small pleasure boats to operate in the navigable waters of the sound, unless they follow the channel that is dredged for large boats. Sportsmen and pleasure seekers in small boats operating along the sound shore in water from three to ten feet deep are always in fear of running on or into these net stakes causing loss of limb and property and sometimes drowning. Attached to these stakes are vast net works of fish nets. These net stakes remain throughout the year, and the nets are set regardless of season when there is evidence of fish. We do not know of any patrol to correct over fishing in Albemarle Sound.

We make this statement to draw a comparison between the value and preservation of fishing and the value and preservation of industry in the lower segment of Roanoke River.

STATEMENT OF THE ECONOMIC VALUE OF NORTH CAROLINA PULP COMPANY TO THE STATE OF NORTH CAROLINA

A short story of the North Carolina Pulp Company plant . . . with a brief description of how pulp and paper board are made for solid fiber and corrugated shipping containers and sanitary milk cartons . . . and the company's contribution to the prosperity and progress of Plymouth and North Carolina.

PULPWOOD--A GOOD CASH CROP

A new industry and source of wealth came to the South when modern chemistry and manufacturing methods combined to develop one of its most abundant natural resources, its woodlands, to help fill one of man's greatest needs--paper. The vast stretches of Loblolly and other species of pines, as well as the gum and other hardwoods furnish a practically inexhaustible source of pulpwood, from which cellulose for paper is derived.

Thus a great market has been opened for the Southern farmer and forest owner. Pulpwood is now an important cash crop and, because of this, greater interest has been aroused in increasing production of timber from lands now poorly understocked or growing practically no timber at all. The care and the production of trees has now become a science. Reforestation is commonplace and the protection of timberlands against fire and insects is receiving much greater public support.

PULPWOOD GROWTH BENEFITS THE LOCAL MARKET

North Carolina Pulp Company has created a steady demand for pulpwood. The company's annual requirement is 650,000 cords. This crop, if stacked in standard cords, would be almost 1000 miles long, further than from Plymouth, North Carolina, to Minneapolis, Minn., and has a value of more than $13,000,000.

But that is not the complete story. The pulpwood market furnishes a profitable outlet for "weed" trees, defective timber, "tops" and "thinnings." These are all unsuited for lumber and in using them for pulpwood the grower gains an income from former waste. To more fully utilize and to bring into better balance the forest resources of the area, the company has built and put into operation a special process to use hardwood species. This process actually makes a corrugating medium superior to that obtainable from pine alone. We are doing work which indicates that this type pulp can be used to improve the quality of bleached papers - thus providing a further use for material which now has little market value.

Nor is the story yet complete, for by the end of 1956 North Carolina Pulp Company will be buying wood chips at the rate of 50,000 cords or more per year. These chips will come from the wood waste of Southern pine sawmills, waste formerly burned as refuse, but now being converted into saleable chips. To aid the small sawmill owner whose lumber production is too small to be able to afford chipping machinery, we have installed at Plymouth, the only hydraulic slab debarker in the East. To this machine comes unbarked slabs from the surrounding small sawmills; thus, providing not only a means of utilizing his waste product, but also bringing a new source of income to the mill owner.

PULPWOOD IS EASY TO RAISE

The fast-maturing pines require little attention during growth, making them an ideal investment. The North Carolina Pulp Company in cooperation with the State Forestry Department, through patient experimentation and research, have developed methods of growing trees to secure the best yield per acre.

In its own extensive timber stands the North Carolina Pulp Company demonstrates careful setting out, care, and cutting, for a perpetual supply of pulpwood trees. The company will gladly assist other forest land owners in their efforts to secure maximum returns. Roughly, 2,000,000 pine seedlings are distributed annually without charge to such groups as F.F.A., 4-H Clubs, F.H.A., and the Boy Scouts.

The grower need not fear the ultimate draining of his timber resources. Through correct planting and selective cutting a lifetime crop is assured.

FIRE MEANS AN ECONOMIC LOSS FOR ALL

Fire is the greatest menace of the forest. Each year, roaring flames destroy far more timber than is converted by pulp mills. Organized cooperation between federal and state forestry departments, and many of the larger private land owners are essentially reducing the loss from fires. By far the greatest percentage of fires are a result of incendiarism or carelessness in the burning of various brush and trash. The North Carolina Pulp Company maintains fire fighting units at Plymouth, N. C., Washington, N. C., Elizabeth City, N. C., Newbern, N. C., Winton, N. C., Rose Hill, N. C., and in the sand hill section at Vass, N. C. Fire breaks are cut at strategic points in woodlands. Organized fire reporting and fighting is carried on unceasingly--and effectively--to reduce the losses that often have their origin in a carelessly-tossed cigarette or unquenched camp fire.

RECOVERY OF BY-PRODUCTS AND CHEMICALS

One index of the efficiency of a pulp and paper making plant is the recovery of by-products and chemicals from the black liquor resulting from the cooking of the chips. Turpentine is derived from the gases in the cooking operation itself, and from the liquor is extracted tall oil, widely used in the manufacture of soap, paints and linoleum. The valuable chemicals in the black liquor can be used over again for cooking chips, but must first be extracted. After evaporating part of the water, the residue is sprayed into recovery furnaces where organic substances from the wood are burned out. The remaining chemicals are dissolved in water, treated with lime, and again become cooking liquor, while the lime, after another treatment, is also re-used. Even the intense heat generated in the recovery furnaces is applied, for it creates steam for the turbines and other plant operations.

HIGHLIGHTS

Electricity: The plant manufacturers 800,000 kilowatt hours of electricity daily--approximately enough to supply Raleigh, Durham and Asheville combined.

Every twenty-four hours 35,000,000 gallons of water are filtered and treated--sufficient to supply the cities of Charlotte and Winston-Salem.

Wood: 650,000 cords of wood are purchased annually. This is the equivalent of 36,000 freight car loads and would make up a train 340 miles

long reaching from Plymouth almost to Asheville, clear across the state. Each cord of wood weighs about 5,000 pounds and is composed of 2,600 pounds of wood fiber, 2100 pounds of liquid, 249 pounds of sugars and starches, 45 pounds of resins and oils, and 6 pounds of turpentine.

Paper: From 1938 when the Plymouth plant was started, through 1955 the company spent for materials and labor over $182,000,000. In 1956 alone over $27,000,000 was spent. Among individual items of 1956, pulpwood cost $11,900,000, chemical cost $3,700,000, fuel cost $2,700,000, miscellaneous supplies, etc., $11,900,000. Wages and salaries amounted to $5,700,000.

The daily capacity of the paper machines alone would make a strip over 800 miles long and 17-feet wide--enough paper to cover a two-lane highway from the Atlantic coast westward across North Carolina and Tennessee to beyond the Mississippi. In a year it would equal a two-lane highway almost twelve times around the earth at the equator.

In a year enough milk carton board is produced to bottle milk, which, if placed in quart cartons, side by side, would reach for 113,150 miles or approximately one-half way to the moon.

CLASSIFICATION OF CLASS C CANNOT BE MAINTAINED.

The classification cannot be maintained in the lower segment of the river even if there were no waste from the manufacturing plants and the Town of Plymouth. It is a matter of common knowledge that in the summer months, when the water supply is low and there is little current in the river, there has been a serious depletion of oxygen because of stagnant water, which condition prevailed long before North Carolina Pulp Company established its plant at Plymouth, and before the Town of Plymouth inaugurated its sewer and sanitary system in 1917. Even if there were no mill waste and no sewage going into the river at Plymouth, this condition would still prevail in some of the summer months. It has been aggravated by the construction of the Roanoke Rapids Dam where the water is held in the reservoir and not released in sufficient quantities to maintain a constant current. The pulp mill was at Plymouth long before the Kerr Dam was constructed and the North Carolina Pulp Company ought not to be penalized for the creation of a condition by some other enterprise or governmental agency over which it has no control.

The spirit of the Stream Sanitation Act enables and contemplates reasonable stream improvement when and where it is economically and practically sound. We respectfully submit that it is not economically or practically sound, feasible or fair to require an enormous expenditure which, even then, would not establish the class or grade of stream sanitation contemplated because of natural conditions and vagaries that cannot be controlled in the lower segment of the river.

We have studied the requirements of the classifications set up by the Committee, and knowing and taking all of the foregoing into account, particularly classification, and fish passage that still continues in abundance when the migratory fish are coming in, including the striped bass season, and taking into account prevailing conditions for the past twenty years,

we are convinced and emphasize that the proper classification for this lower eight mile segment of the Roanoke is Class E, which permits sewage disposal and industrial wastes. The condition in this segment of the river is not subject to feasible treatment processes and has not become a nuisance. There is no treatment that will establish oxygen content from four to five parts per million and maintain the same throughout the year.

SUMMATION

1. We have therefore endeavored to show to the Committee what the best usages of this segment of the river have been for many generations through which fish have propagated abundantly and are continuing so to do.

2. We have described the physical characteristics of the lower Roanoke, which includes Middle River and Cashie River, indicating that there is enormous fish passage and survival in these two rivers that are parallel to the Roanoke and spring therefrom, which entirely circumvent the lower segment of the river.

3. That this segment of the river has been suitable and highly usable for industrial transportation for a hundred years or more, during which period the fish have continued to come.

4. That observations indicate, because of current, a tremendous quantity of fish making their way into the upper reaches of the river come in through Middle River and Cashie River. This is established by actual experimentation and observation.

5. That striped bass propagation is found in other rivers of Eastern North Carolina and no alarm can be assumed because of erroneous impressions.

6. The water releases from the dams in the upper parts of the river are having their effect to retard the current contributing to the increase of stagnation in this segment, for which there can be no censure to North Carolina Pulp Company.

7. We have called attention to the economic value of the industries operating on the Eastern Roanoke River and repeat that the spirit of the Stream Sanitation Act requires that this industrial contribution to our State shall not be disregarded, particularly the type of production of highly useful products and items manufactured by North Carolina Pulp Company.

8. That it is not economically sound or practical and during some months impossible to maintain Class C in this segment of the river, and that taking all things into account the lower eight mile segment of Roanoke River may be properly and justly placed in Class E.

Respectfully submitted, this 15th day of January, 1957.

NORTH CAROLINA PULP COMPANY

By (s) E. M. Leavitt
Superintendent.

(s) Norman & Rodman
Attorneys

STATE OF NORTH CAROLINA
WILDLIFE RESOURCES COMMISSION
Raleigh, N. C.

January 15, 1957

RECOMMENDATION ON THE CLASSIFICATION OF THE LOWER ROANOKE RIVER

This will constitute the recommendation of the North Carolina Wildlife Resources Commission to the State Stream Sanitation Committee at its meeting at Halifax, North Carolina, on January 16, 1957, concerning the classification of the waters of that portion of the Roanoke River from the John H. Kerr Dam to the mouth of the river in Albemarle Sound. The interest of the Wildlife Resources Commission in this classification is to request that consideration be given to the preservation of the wildlife values represented there.

The deleterious effect of low quality water on fish populations is without question. Resident fishes, which are present during all months of the year, include bass, bream, crappies, white perch, and catfish. These are the basis of an important year-round fishery for a very considerable number of sport-fishermen in the Valley. The Roanoke River also constitutes the spawning ground for several anadromous species. The shad, herring, and striped bass, which spend most of their lives in salt water, come into the fresh waters of the river to spawn.

In terms of dollar values, it is likely that the anadromous species are the most important. The shad and herring are subject to a very large commercial exploitation, and their presence contributes to the welfare of hundreds of commercial fishermen. The striped bass has an even greater range of importance because it is both a commercial and a sport fish. The spawning runs of striped bass have made the fishery in the upper Roanoke River so important that Weldon has received the name of being the "Striped Bass Capital of the World".

The loss of the Roanoke River as a suitable spawning ground would have different effects among the various species. The resident species would, of course, be eliminated. Among the anadromous species, the shad and herring which spawn in the river would be lost. However, it would be a fractional consideration because there is successful spawning in other rivers for these species. This consideration is not true of the striped bass.

Many years ago Dr. Merriman investigated the striped bass of the Atlantic Coast, and paid considerable attention to the striped bass population of North Carolina. By tagging fish and tracing their movements through the recovery of tags, he determined that the striped bass population of North Carolina is an indigenous subspecies. These fish spend their adult lives in the coastal rivers and sounds of North Carolina, or in the ocean waters of our coast. There is relatively little interstate migration. Our striped bass population is something for us to preserve or to destroy.

His studies also showed that the Roanoke River constitutes the principal spawning ground for this entire population. Hundreds of fishermen in northeastern North Carolina depend on them for food or for at least a part of their income. The loss of this species would literally affect the welfare of thousands of people. The success or failure of this species is based on suitable spawning conditions in the Roanoke River.

The physiology of the reproduction of striped bass is somewhat unusual among fishes. They do not build nests, but the eggs are cast free near the surface of the water. In order that these eggs may be supplied with oxygen, it is imperative that they be laid in fast flowing water to keep the eggs in agitation, off the bottom of the river, and in a continuously floating condition. The adult fish seem to recognize this requirement and they swim upstream until they find a suitable situation before the eggs are laid. The Roanoke Rapids area is unique among our coastal streams in that it appears to provide perfect spawning conditions -- at least under the conditions which existed prior to man-made manipulations in terms of quantity and quality of the water. The other rivers of our coast provide very little in the way of suitable spawning habitat. It is for this reason that we believe the future of the striped bass population in the waters of North Carolina depends upon suitable conditions for reproduction in the Roanoke River.

It might be well to consider briefly the life-cycle of the striped bass. In the spring, the adult fish move from the coastal areas into Albemarle Sound and westward to the Roanoke River mouth. When high-water conditions arrive, they proceed up the river to their ancestral spawning grounds. At the mouth of the river they have a choice of three avenues for reaching the upstream area. The main stream of the three is seriously polluted at this time. Scientific studies have demonstrated that migrating fish usually can be expected to follow the main channel, presumably upon the basis of their sensory perceptions of the largest quantity of flow. Other studies have shown that migrating fish can be diverted on the basis of unsuitable water conditions. It is possible that the adult fish may use the two smaller unpolluted channels rather than the main channel which is seriously polluted. At any rate, a considerable number of adult fish successfully pass the pollution barrier at the mouth of the river and move on upstream.

They move up the river into the fast water of the Roanoke Rapids-Weldon area to spawn. This takes place over a period of several weeks after suitable water temperatures arrive. They use the spawning ground so long as river stages are at or above the 13-foot mark on the Weldon gage. Lesser stages will produce so little water in the rapids that the fish are driven out and into the downstream reaches.

Most of the spawning seems to take place in the rapids area. The water is polluted as a result of impoundment. The impoundment changes the water quality, both in terms of temperature, the chemical characteristics, and especially the oxygen content. The municipal and industrial wastes of the Roanoke Rapids area are added to the river at the head of the spawning grounds. The industrial wastes especially are suspected of having toxic elements present as well as the adverse effects of deoxygenation. It is

during the egg and fry stages, while the embryos are developing and immediately afterward, that the effects of pollution are most serious. If the species is to survive, attention to water quality will be necessary by both the agencies impounding the water and those loading it with municipal and industrial wastes in this area.

Assuming that conditions have existed which permitted the eggs to be laid and to be carried downstream by the current in water of suitable quality for their development, the embryonic fish develop within the eggs. In the lower section of the river, the small fish hatch out of the eggs and continue to be carried by the current toward the river mouth. It is in this area that the benefit of all the efforts to produce suitable spawning conditions can be lost unless consideration is given to providing suitable water for the fry to reach the Albemarle Sound area. We conceded that the adult fish, on their upstream migration, might possibly have avoided the industrial pollution at the river mouth. This is not true of the fry moving downstream. At that stage in their existence they cannot change their course of their own volition. They are carried by the current regardless of their efforts to swim. When they reach the general region of the river mouth, it is quite possible that some few of them are carried into the two lesser channels through which the river moves into the sound. There is no doubt, however, that the vast majority of these helpless fry are carried down the main stream of the river and are subject to the pollution introduced into the river in that area. The number of these fry which successfully pass out into the sound is the determining factor on the future populations of striped bass which will be available to the people of the State in the coming years. In considering this problem of providing suitable spawning habitat for the striped bass, it is a serious error to consider only the upstream aspect of the river when the river mouth, and the quality of the water in that area, is at least equally important.

These considerations might be summarized by saying that the North Carolina striped bass population depends upon suitable spawning conditions in the Roanoke River; that the eggs and fry of the striped bass, like those of other fishes, are much more susceptible to adverse conditions than are the adults of the species; that there is pollution at the head of the spawning grounds in the form of impounded water, industrial wastes, and municipal wastes, the detrimental aspects of all of which must be reduced to a level compatible with the embryonic development of the species; that the fry, in moving downstream to the sound, must run the gamut of every additional source of pollution in the length of the river, and that the pollution at the river mouth is at least equally serious as that upstream when the welfare of the young generation of fish is considered; that the failure to maintain the entire Roanoke River as a suitable spawning ground for the species will seriously and adversely affect the lives of hundreds and probably thousands of North Carolina citizens who depend on the striped bass for recreation, for income, and for food; and that there appears to be no reason why a natural resource, worth several million dollars annually to thousands of residents of the State, should be destroyed needlessly.

It may well be that a request will be presented to provide a "swamp-water" classification for the river-mouth area. This would be entirely

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unjustified. The Roanoke River heads in the mountains of Virginia and flows downstream across the piedmont section of the states into Albemarle Sound. There is no basis in fact for considering the water of the Roanoke River as swamp water. Any effort to promote such a classification must be based simply on the desire to have a lesser oxygen requirement recognized in order that additional pollution may be added. The lesser oxygen requirement might well represent the difference between success and failure of reproduction of the anadromous species.

It is for these reasons that the North Carolina Wildlife Resources Commission respectfully requests the State Stream Sanitation Committee to give favorable consideration to the classification of the waters of the Roanoke River in the entire area from the John H. Kerr Dam to the river mouth in Albemarle Sound to provide water of a quality suitable for the reproduction and embryonic development of our game fishes and our important commercial fishery resources which originate in this area.

(s) J. H. Cornell

J. H. Cornell
Chief, Fish Division